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SURVEY

Management wares draw ire of users

BY JOHN McCONNELL

Network managers apparently are getting fed up with management system vendors for not providing the type of platforms and applications needed to control their nets.

A recent survey of 220 network and systems administrators, conducted for *Network World* by McConnell Consulting, Inc., finds buyers frustrated that products often don't live up to the hype, and many users don't have the confidence — or patience — to try to deploy the tools on an enterprise scope.

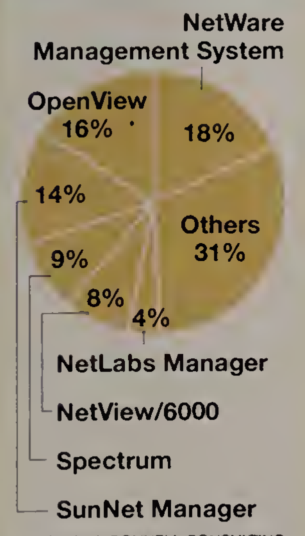
"The impression I have is that the people who write this software haven't ever actually managed a real network, so they're just guessing about what's useful and what's not," says Dana Dawson, senior network analyst at a large computer maker.

David Duggan, a member of the senior technical staff at Sandia National Laboratories in Albuquerque, N.M., agrees. "Vendors need to spend more time watching how their customers really use their products and learn how they think about management," he says.

Continued on page 46

Management platforms in use

Based on 220 respondents



SOURCE: McCONNELL CONSULTING, INC., BOULDER, COLO.

IBM changing course of ATM migration plan

New low-end FEP, router card fit into scheme.

BY MICHAEL COONEY

Las Vegas

IBM will refocus its year-old ATM strategy by July with the announcement of plans and products designed to help users more easily migrate to ATM-based enterprise networks.

Company executives at NetWorld+Interop 94 here last week also detailed plans for a new low-end front-end processor (FEP) and new router products that will enable customers to build less expensive, more flexible networks.

"What we want to do is provide users with a wide variety of access products into ATM services," said Steve Simon, senior planner in IBM's network routing systems group. "This will involve the repackaging of existing products, repositioning others and adding new features."

The first big step will be to put a 6611 router module inside IBM's Transport Network Node (TNN) Asynchronous Transfer Mode switch, analysts said. Until now, the 6611 had no role in IBM's ATM plans.

"The 6611 will become part and parcel of the TNN, giving any existing legacy applications immediate access to ATM services," said Rick Villars, director of communications research at International Data Corp. in Framingham, Mass. "IBM is

See **Migration**, *page 61*

IBM will offer ATM interfaces for...

- A stand-alone version of the 3746-900 FEP
- The AS/400
- 3174 controllers
- The RouteXpander/2

...and integrate a 6611 router module into its TNN ATM switch.

LAN INTERNETS

And let no ATM LAN be an island

BY JOANIE WEXLER

While integrating ATM into local nets is a challenge, the task gets even thornier as users begin to try linking these ATM islands across wide-area services.

"Unequivocably, no; you cannot just plug your premises ATM switch into a carrier service," said Walter Gould, who was elected chairman of the Enterprise Network Roundtable (ENR), the user group faction of the ATM Forum, at last week's NetWorld+Interop 94 show in Las Vegas.

For now, the onus is on the user to ensure that equipment works with carrier services, he said, adding that there are many unresolved issues. These include a lack of specifications for ATM net management, congestion control, secure net partitioning and delivery of consistent classes of service in

See **ATM LAN**, *page 60*

Moving TO ATM

Second in a series on ATM interoperability issues.

What's up doc-ument?

JEFF SCHEID

Discussing a joint document mgmt. effort at NetWorld+Interop 94 are Richard King, Novell; Peter Cuylenberg, Xerox; and Robert Young, Novell. See story, page 22.

AT&T takes on Internet

BY CARYN GILLOOLY

Las Vegas

AT&T and Novell, Inc. last week demonstrated a new global data service designed to give businesses access to Internet-like services that are more secure and easier to use than the Internet itself.

AT&T NetWare Connect Services, which uses AT&T's InterSpan frame relay network to link Novell NetWare 4 servers installed in the network, will provide a public net platform for applications based on Lotus Development Corp.'s Notes groupware and other software.

The service will provide a gateway to other nets, such as the Internet, public messaging facilities and information services. Customers will be able to access these resources from desktop systems in NetWare networks or with Transmission Control Protocol/Internet Protocol connections, as well as from portable computing devices.

See **Internet**, *page 61*

Client/server in vogue at Esprit

BY KEVIN FOGARTY

San Francisco

When it comes to outsourcing, sportswear maker Esprit de Corp. has fashioned a style of its own that entails handing off mainframe-based functions to save money and putting internal developers to work on building a client/server network.

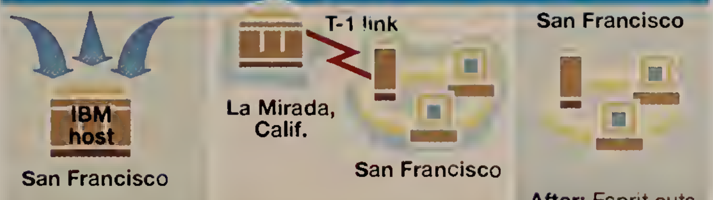
By jobbing out responsibility for its mainframe as the first step to ditch the machine, Esprit is giving itself time to convert its mainframe specialists into client/server technicians. The move will also buy the user time to put together a set of applications that will help it cut production time and make its distribution system more efficient.

The goal is to make the company's rigid homegrown applications more flexible and save $1 million per year in operational costs, according to Pete Bates, vice president of systems for Esprit's U.S. operations, based here.

The planned Unix- and Novell, Inc. NetWare-based client/server network will be anchored by 11 IBM RISC System/6000s and connect Esprit's headquarters, warehouse, two showrooms and 17 retail outlets across the country. Most of the servers will be at headquarters here and at the warehouse in nearby Brisbane, Calif. The two centers are connected by a T-1 leased line, Bates said.

See **Esprit**, *page 60*

Trying on client/server for size

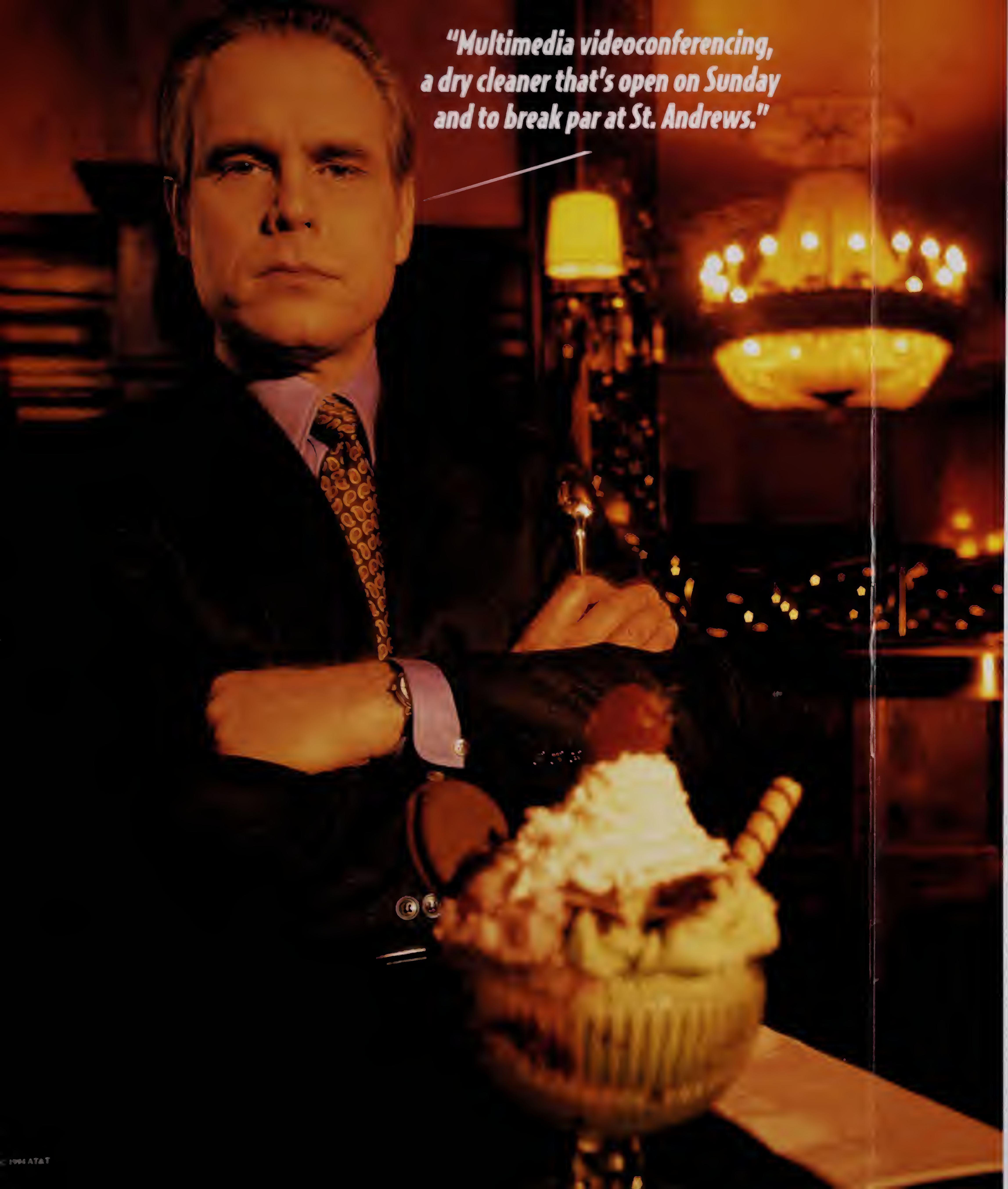


Before: Esprit's data processing is done on an IBM mainframe; 17 stores update files nightly by modem.

During: Esprit outsources mainframe to SMS, which will process data remotely. Esprit IS staff bones up on client/server technology and begins installing servers.

After: Esprit cuts over client/server net featuring 11 IBM RS/6000 servers running new business applications.

NEWSPAPER
100


"Multimedia videoconferencing, a dry cleaner that's open on Sunday and to break par at St. Andrews."

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These days, your most demanding customers want more than phone, fax and the occasional modem. A lot more, in fact.

They want interactive video. High-speed data. In short, anything you can come up with that'll give them a leg up on the competition.

But for that, you need broadband. You told us you want it up and running fast, and for not a lot of money. But you also said you won't sacrifice the longevity of your network for a quick fix. You said you want the technology you invest in today to still be the technology you're using tomorrow.

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It's called the AT&T GlobeView™-2000 Broadband System. It can be configured in several different ways. So you can start with any level of ATM service you need.

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WHAT DO YOUR TOUGHEST CUSTOMERS WANT, EXACTLY?

Briefs

Hostile relations. LDDS Communications, Inc. in Jackson, Miss., last week made an unsolicited bid to take over fellow carrier WilTel. Such a deal would put WilTel — which focuses on business data and voice services — under the thumb of LDDS, which has already expanded its retail telephone business via its merger with Metromedia Co.'s long-distance unit. WilTel's parent company, Tulsa, Okla.-based Williams Co., rejected the offer. It is unclear how LDDS will proceed.

Which carrier is Dan Quayle REALLY using? Carriers battling for business in the wake of the move to 800-number portability last year did not take into consideration the poor spelling skills of many Americans, according to a software engineer at MCI Communications Corp. When AT&T countered MCI's 1-800-COLLECT, which bypasses local operators for long-distance toll-free collect service with its own 1-800-OPERATOR program earlier this year, it probably did not anticipate callers sloppily dialing 1-800-OPERATER — an MCI 800 number. According to the MCI engineer, MCI swept up about $500,000 in mistaken calls in the first month of AT&T's program. AT&T now markets the service by asking customers to call 1-800-CALL-ATT.

More marketing woes for Banyan. Banyan Systems, Inc. just can't keep those marketing people. The VINES vendor, which has long been criticized for not being able to get the word out about its strong technology, took another hit last week when James Schaper, senior vice president of worldwide sales and marketing, announced his resignation. According to a Banyan spokesperson, Schaper resigned for personal reasons.

'Not road-kill on the Info Highway.' That's how one GE Information Services (GEIS) official last week described a deal with Ameritech in which the Bell company will pump $472 million into GEIS. Announced in December 1993, the deal was consummated last week. Technically, the money comes in the form of a loan, but it will be converted into a 30% equity share if and when the government lifts current restrictions on such efforts by the regional Bell holding companies.

The Massachusetts primary. NYNEX Corp. last week introduced the Integrated Services Digital Network Primary Rate Interface (PRI) services to the Boston area. NYNEX's PRI offering includes a call-by-call service selection capability that lets any of the 23 individual 64K bit/sec "B" channels on a PRI be used for any call type at any time, eliminating the need to engineer separate trunk groups.

Serving up servers. What comes after superservers? ClusterServers, of course. NetFrame Systems, Inc. this week is expected to bring out a new family of superservers — dubbed ClusterServers — that offer users increased levels of reliability, manageability and scalability compared with the company's existing offerings. The new machines feature new LiveLogic I/O hardware that provides continuous availability by partitioning different processors within the system. The servers include new software, called Maestro, that lets administrators manage and configure NetFrame systems from remote Windows-based workstations. The new ClusterServers are available starting at $24,950 for a two-processor model.

NetFrame: (408) 944-0600.

Feds draw up EDI blueprint. The General Services Administration (GSA) and the Department of Defense last week issued a draft report on a blueprint for doing electronic commerce with the government. The report calls for government agencies, which together buy $200 billion in goods and services each year from suppliers, to let companies bid on government business electronically. The report is available on the Internet via anonymous FTP to ds.internic.net and the password "guest." For information, call (703) 681-0364.

Contacts

ADDRESS: Network World, 161 Worcester Rd., Framingham, MA 01701. PHONE: (508) 875-6400; FAX: (508) 820-3467; INTERNET: network@world.std.com.; BBS: Interact with other readers: download free software, submit letters to the editor, leave news tips, change of address requests or hunt for jobs by using your IBM, Apple or other computer to dial into the BBS at speeds up to 9.6K bit/sec by dialing (508) 620-1178 or (508) 620-1160. READER ADVOCACY FORCE (R.A.F.) HOTLINE: Contact us with story tips about pressing user issues, (800) 622-1108, Ext. 487; NETWORK HELP DESK: Contact Dana Thorat via any of the above means.

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MGM's MIS director hits the jackpot with a fiber-optic backbone network for the world's largest hotel, casino and theme park complex. *Page 22.*

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Riding the Internet *with* Chameleon

Need dial-up access to the Internet?

Looking for an easy way to take advantage of the Internet's vast resources?

Check out NetManage, Inc.'s Internet Chameleon. It's an easy-to-use Windows application that slaps a friendly face on the Internet. See our review, page 44.

Network HELP *desk*

Network World *tracks down answers to your questions regarding products, services, technologies or disputes with vendors. Please submit questions to Dana Thorat at (800) 622-1108, via fax at (508) 820-3467, via the Internet at djt@world.std.com or via CompuServe at 73244,2673.*

Can you tell me where to find the new version of Novell, Inc.'s CDROM.NLM for NetWare on the Internet or CompuServe?

Nicholas Palmer, El Segundo, Calif.

Ronald Nutter, director of technical services at 900 Support, a 24-hour, seven-day-a-week NetWare technical support company in Lake Oswego, Ore., replies:

The latest release of CDROM.NLM, the CD-ROM NetWare Loadable Module for NetWare 3.12 and 4.01 is not yet available.

Novell is currently enhancing the product to enable users to mount a CD without a volume name or under a name different than the one used for that CD. Users can also expect a reduction in the time it takes to remount a CD.

Novell expects to release CDROM.NLM and make it available on CompuServe and the Internet around the end of the month.

I recently found the QRRY virus on three of our workstations. I've tried several antivirus products without success. Do you have information about the QRRY virus and how to kill it?

Colin Gallagher, Washington, D.C.

Jonathan Wheat, a security consultant at the National Computer Security Association, a Carlisle, Pa.-based organization that promotes security awareness to microcomputer and network users, replies:

The QRRY virus, also known as QRRY BOOT, Quarry and Query, is a boot sector infector, meaning the virus stores itself in the boot sector of either the workstation's hard drive or a diskette and takes effect whenever the workstation is booted. Once in memory the virus can overwrite portions of the workstation's hard drive between Dec. 1 and Dec. 31 of any year.

If the QRRY virus is stored on a diskette, it can

See Help desk, *page 43*

Users pleased with clean connectivity of SNA Server

BY CHRISTINE BURNS

Early users of Microsoft Corp.'s SNA Server are singing its praises, saying it is easy to use, supports a large number of concurrent users and offers powerful management features as a result of its tight integration with Windows NT Advanced Server (NTAS).

SNA Server 3.0, which shipped last November, runs on Windows NTAS and gives local net-attached users access to Systems Network Architecture-based IBM mainframes and Application System/400 minicomputers. It supports up to 500 sessions and 250 users. Session types include LU 0, 1, 2, 3 and 6.2.

"This [product] gives us enough host connections for local and remote host connectivity plus a single point of management — two things I didn't have with the previous setup," said Joseph Johnson II, director of microsystems development at PriceCostco, Inc., a chain of wholesale stores that has its information systems headquarters in San Diego.

Johnson has been using SNA Server in production mode for three months. Prior to that, he employed multiple gateways that consisted of communication boards in dedicated personal computers linked to an AS/400 minicomputer. "This is simply a nicer, cleaner connection for us," he said.

Despite the good early reports, analysts say Microsoft has yet to pull customers away from Novell, Inc.'s SAA for NetWare, which has a corner on the market.

"There is interest in Microsoft's SNA Server, but not a lot of folks are opening up their wallets to buy it," said Cheryl Currid, president of Currid & Co., a consultancy in Houston.

"Gateways are really ugly, and both Novell and Microsoft have offered an easier answer. The thing is Novell has done it on a platform that everybody is familiar with," Currid said. "And if it isn't broken, users are going to be hesitant to go to an unproven platform like NT to fix it."

But some users have invested in Windows NT because they question Novell's long-term stability.

Pamela Ballard, vice president of the community banking group, systems department at the First National Bank of Chicago, said the bank has a NetWare LAN in each of its 77 branches. However, Ballard does not think that NetWare is robust enough to handle what she considered a mission-critical application for the bank: accessing its credit information stored on a mainframe in Chicago. "Windows NTAS is a platform that is strong enough to handle the job for us, so we went with the product that runs on top of that," she said.

As a means to sway potential users toward its connectivity option, Microsoft is revving up a new release of SNA Server that will hit the streets this summer after Daytona — the next version of Windows NT and Windows NTAS — hits the market (*NW*, April 4, page 118).

Vesa Suomalainen, product-line manager for IBM host connectivity at Microsoft, said the next release of SNA Server — code-named Indy — primarily focuses on capacity. The concurrent user count will increase from 250 to 2,000, and the number of logical unit sessions will jump from 500 to 10,000.

David Koptik, technical strategist for Baxter Health Care, Inc., headquartered in McGaw Park, Ill., is excited about the increase in users supported because it will help the firm in its move from a wide-area SNA net to a completely TCP/IP system.

"We've got an SNA gateway sitting at each of our 200 remote sites, and that can be a management headache," Koptik said. However, as the company moves to its Transmission Control Protocol/Internet Protocol backbone, it will be able to remove the 200 remote SNA Digital Communications Associates, Inc.'s Select Communication Server gateways, install five to 10 SNA Servers and provide the same level of host connectivity to its end users.

Indy will also run on new hardware platforms and include native support for Apple Computer, Inc.'s AppleTalk, TCP/IP and Banyan Systems, Inc.'s Banyan IP transport protocols (see graphic). In terms of third-party developer support, dozens of independent software vendors have produced terminal-emulation and file-transfer applications that run on-top of SNA Server.

DCA will ship 3270 emulation software for the Macintosh that takes uses the native AppleTalk protocol support to be included in Indy. OpenConnect Systems, Inc. will offer add-on TN3270 emulation software that uses the TCP/IP support in Indy to let Unix clients access IBM mainframes.

©Microsoft: (800) 426-9400.

Racing ahead with Indy SNA Server

- Handles as many as 2,000 concurrent users and 10,000 logical unit sessions.
- Added platform support for Digital's Alpha AXP and MIPS Computer Systems, Inc.'s RX400-based servers.
- Native connectivity with AppleTalk, TCP/IP and Banyan's IP transport protocols.
- Enables direct connection to host systems.
- Runs on Windows NT Advanced Server 3.0 or Daytona.
- Available mid-summer.

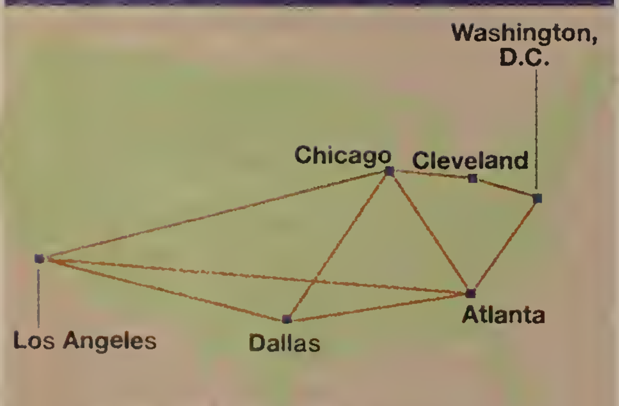
MCI sheds more light on its data service net plans

BY BILL BURCH

Las Vegas

In a pair of data service announcements, MCI Communications Corp. last week revealed plans for an ATM service launch and detailed the integration of BT North America, Inc.'s service portfolio into its own.

MCI puts ATM to the test



Since last July, MCI has been testing Northern Telecom's Magellan Gateway ATM switch in a six-node network across the U.S. Applications tested on the network include videoconferencing, scientific imaging and high-speed data transfer.

GRAPHIC BY SUSAN SLATER

In the Asynchronous Transfer Mode announcement, MCI said it has been testing the latest ATM switching technology and running a six-node trial network since last July, and will launch a commercial service late this year or early next. MCI expects to choose a switch supplier for its commercial service around the middle of the year, said Paul Weichselbaum, MCI's vice president of data marketing.

In the prototype net, MCI has been using Northern Telecom, Inc.'s Magellan Gateway ATM switches to get hands-on experience with ATM applications that require support for multiple data rates over a single connection. Trial participants included Bear, Stearns & Company, Inc. in New York, which used the net to support simultaneous desktop videoconferencing and 17M bit/sec data connections to Boston.

With ATM technology still immature and the market still developing, MCI's current focus is on understanding customers' needs for various application sets, Weichselbaum said. MCI initially plans to offer ATM service that includes Classes A, constant bit rate; C, connection-oriented data and imaging; and D, connectionless services; with B-class service (voice and video) to be introduced sometime later, he said.

MCI's cautious entry into ATM is partly intended to allow the technology time to mature. For example, the first generation of switches lacks sophisticated buffering technology needed to simultaneously offer multiple classes of service, Weichselbaum said.

In addition to announcing its upcoming

See MCI, *page 62*

CORRECTION

The Short List for intelligent wiring hubs that appeared in the May 2 issue should have made it more clear that the Chipcom Corp. ONcore Switching System and IBM 8260 MultiProtocol Intelligent Switching Hub products were considered as a single entry because they are based on a jointly developed platform. There was also an incorrect reference to Cabletron in the Chipcom/IBM entry. Cabletron makes its own product, which also made The Short List.

VIDEOCONFERENCING

PictureTel, Compaq team on low-cost desktop products

BY ELLEN MESSMER

Houston

Compaq Computer Corp. and PictureTel Corp. last week said they will join forces to develop a line of low-cost personal computer-based videoconferencing products that will debut in mid-1995 and expand over the next five years.

The first offering will be a PC add-on board based on the H.320 standard that supports videoconferencing across local nets as well as switched 56 and Integrated Services Digital Network wide-area links.

The companies will sell the video board to end users and manufacturers.

Ultimately, Compaq will integrate the technology into an inexpensive line of PCs, which will be optimized for videoconferencing and shipped preconfigured for easy use.

Kevin Bohren, vice president of marketing for Compaq's desktop division, said he thinks Compaq will be able to sell a PC-based videoconferencing system for somewhere between $1,000 and $1,500.

LACAVA

That compares to desktop videoconferencing products — generally offered as add-on kits consisting of a video coder/decoder, microphone and camera — currently ranging in price from $2,000 to more than $5,000. PictureTel last year introduced its own desktop videoconferencing kit, the PCS Live add-on kit, but at nearly $6,000, it has yet to find mass-market appeal.

"Our vision would be, in the first half of '95, that Compaq would ship a preconfigured system with the technology integrated into the machine," Bohren said.

PRICE BARRIER

Although Intel Corp. recently announced a $2,000 videoconferencing kit, dubbed ProShare — which does not support the international H.320 standards — analysts said that the price must come down further before users rush to buy it for the desktop.

But Compaq's lack of experience in the videoconferencing market is evoking some skepticism about the future of the PictureTel deal.

"You have to question how durable this alliance is," said Ajit Kapoor, president of Intelligent Solutions, Inc., a consultancy in Marshfield, Mass.

"Also, the two companies face stiff competition from Intel and Microsoft, which want to do the same thing."

Indeed, alliances can be volatile in the videoconferencing arena. PictureTel Vice President Dom LaCava acknowledged that PictureTel has already bailed out of the Intel-led consortium announced in January to develop a common specification for desktop videoconferencing software and hardware.

"The fact is, we just couldn't agree with Intel on the way the consortium should be run," was all LaCava would say.

But Compaq's support for the H.320 videoconferencing standards won applause from users. "It's important that the desktop systems interoperate with the established room systems," said Howard Lapointe, videoconferencing engineer at MasterCard International, Inc. Lapointe added that he has yet to see any videoconferencing system that really works effectively across a LAN. ◘

AT THIS YEAR'S TRADE SHOW, WE WERE NETWORKING HARDER THAN ANYONE.

CHOSEN FOR THE 1994 NETWORLD + INTEROP NETWORK.

This year, while a lot of people walked around and enjoyed the show, we worked it hard. Our servers were a part of the network running demos. So, all week long, they were busy protecting data, preventing crashes, and keeping info flowing to booths all across the hall floor. For more information about Dell servers, give us a call. And experience our networking skills first hand.

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Users warn of moving too fast to high-speed LANs

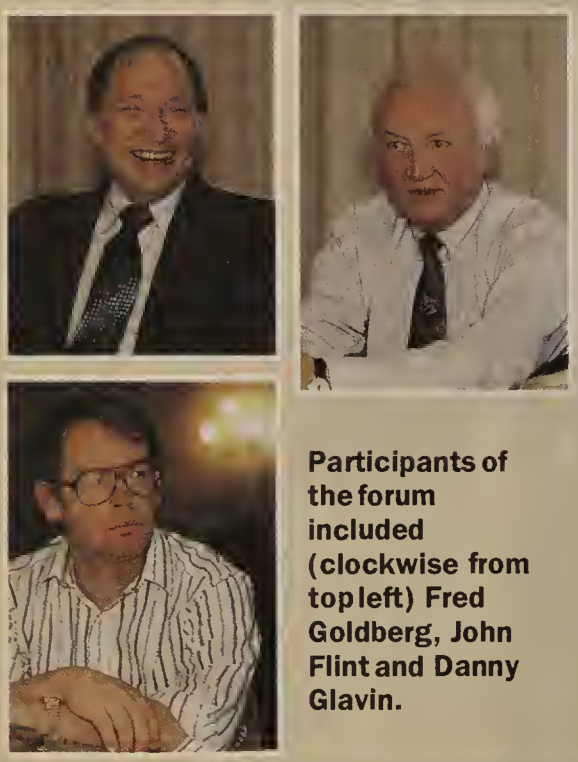
BY SKIP MACASKILL

Las Vegas

Walking the floor at NetWorld+Interop 94 last week, it was easy to get caught up in the hype and promise of high-speed technologies such as ATM. But backers of switched Ethernet are hesitant to buy into this Camelot.

Citing a litany of issues, including unfinished standards, lack of management and outright confusion, switched Ethernet users participating in a forum on high-speed local nets voiced reservations about moving to fast Ethernet and Asynchronous Transfer Mode too quickly.

The forum, which was sponsored by Standard Microsystems Corp. and hosted by *Network World* and Decisis, Inc., a consultancy in Herndon, Va., showed users are counting on their switched Ethernet environments to meet their high-capacity needs.



Participants of the forum included (clockwise from top left) Fred Goldberg, John Flint and Danny Glavin.

JEFF SCHEID

"To leap into ATM now or some other technology that promises similar benefits would be completely premature because there are so many outstanding questions," said Denny Glavin, senior network analyst at the Medical Center of Delaware in New Castle. "We're a good two or three years away from even evaluating ATM. We're willing to let the technology bake for awhile and achieve some maturity."

How can they afford not to pursue ATM or one of the new 100M bit/sec Ethernet technologies? Switched Ethernet schemes more than meet their needs today.

"We use a number of imaging applications to pass insurance documents and forms from one workstation to another, and switched Ethernet handles that without difficulty," said Joe McCarthy, assistant vice president of information systems at Equitable of Iowa Companies in Des Moines. "We have our servers on a 100M bit/sec FDDI ring to give those users more efficient access, but there is no need for 100M bit/sec down to the desktop to run our applications."

Randy Mallory, networking supervisor at Siemens Automotive in Newport News, Va., hopes his switched Ethernet environment will get him by until ATM becomes a requirement in a few years. "We're adding more [computer-aided design] applications all the time, so it's a wait-and-see situation," he said. "But the switching environment has handled all the strain up to now."

With the exception of Siemens, which is solely an Ethernet shop, the other users have Fiber Distributed Data Interface to handle current high-speed needs, typically to support servers or in a backbone configuration.

"FDDI is mature and the standards are settled, which makes users feel more comfortable with it," said Fred McClimans, a principal at Decisis. "If a high-speed need exists now and switched Ethernet can't handle it, FDDI may be the safest investment."

It's that lack of proven performance and stability that has users shying away from ATM, according to Fred Goldberg, senior network engineer at General Electric Capital Corp. in Princeton, N.J.

"Standards are still in a state of flux and need to be firmed up before I'll have confidence in what I'm buying," he said. "Stable standards will help the technology mature and give vendors a foundation to build interoperability on."

100M ETHERNET

While the users were united in their belief that ATM will eventually become a part of their environment, they were confused about which 100M bit/sec Ethernet option to invest in.

There are two fast Ethernet standards that maintain Ethernet's media access control layer and collision detection scheme — one running over four-pair, Category 5 unshielded twisted-pair wiring and the other using two-pair Category 3 copper.

There is also a competing standard, dubbed 100VG-AnyLAN, which requires four pairs of wires, but replaces Ethernet's collision scheme with a priority signaling method that optimizes the technology for multimedia applications.

"I'm looking at applications such as imaging and CAD/CAM that I want to support on my installed base of Category 3 copper, but I have to hedge my bet and make sure that I also pull four-pair Category 5 in all new installations," Goldberg said.

Users are also concerned with how they will manage these new technologies. For switched environments, vendors have been pushing the concept of virtual networking where workgroups can be composed of any combination of end nodes and managed logically via software.

This virtual LAN capability is virtually meaningless to some of the users, however.

"The only virtual LAN we have is the one I dream about in my office," said John Flint, manager of network computer systems at Siemens Automotive. "For me, it's a question of what a virtual LAN actually is. Depending on the vendor you're talking to, you'll get different answers."

For Goldberg, it's a lack of maturity that keeps him away from employing virtual LANs. "We looked at the first generation of these products and saw a lot of shortcomings, such as lack of adequate address space, restriction of those capabilities to one hub and [no proven way] to do troubleshooting," he said. "The other question is one of presentation. If all these connections are logical, how does that look graphically on my management console. We'll probably take a closer look at the second generation."

McClimans added that interoperability may be the largest question facing virtual LANs. "Different vendors implement virtual LANs in different ways, so there are some significant interoperability questions that must be answered," he said.

The advice these users had for others who are evaluating a variety of high-speed options was one of looking before you leap.

"Go slow, explore all your options and force vendors to back up their claims with real implementations that are standardized and interoperable," Glavin said. "Technology maturity and stability will be your best friends when you upgrade to whatever high-speed option you choose." ☒

Comments?

See "Contacts" box on page 2.

Report cites NII hurdles; PCS license inquiry arises

BY DAVID ROHDE

Washington, D.C.

Maybe you can't wait for the Information Superhighway. But other people are suspicious of it, don't feel secure on it, don't have the skills for it or can't get the money for it.

That was the message from a report released last week by an interagency group developing the Clinton administration's plan for the National Information Infrastructure (NII), known as the Information Superhighway.

To encourage support for the goal of a seamless national communications structure, the Information Infrastructure Task Force listed a host of potential NII applications. But the task force report also described a list of hurdles that must be leaped over before the NII takes shape (see graphic).

"Obstacles are inevitable," said Commerce Secretary Ron Brown in a briefing. "But anyone who says we won't succeed is sadly mistaken."

Ironically, a widely anticipated part of the NII — the long-delayed award of licenses for personal communications services (PCS) — last week hit a new snag when Rep. John Dingell (D-Mich.) complained that the Federal Communications Commission had improperly awarded "pioneer's preference" status to four companies.

Dingell said the companies received the special status because of "political and lobbying pressure." The House Energy and Commerce Committee, of which Dingell is the chairman, is conducting an investigation, he said.

Charges were denied by the firms involved. They include: American Personal Communications, Omnipoint Corp. and Cox Enterprises, Inc. for wideband licenses, and Mobile Telecommunications Technologies Corp. for narrowband/two-way paging licenses.

One observer said Dingell's charge could gain credibility as the firms did not win preferences based on clearly outstanding pioneer work in the field.

"It's very hard to support the case that those who got the pioneer's preference clearly out-performed those who didn't," said Chuck Jackson, principal with Strategic Policy Research, Inc., a Bethesda, Md., consulting firm specializing in PCS.

Earlier in the week, FCC Chairman Reed Hundt told the National Press Club that the FCC would respond to more than 60 petitions for reconsideration of its wideband PCS spectrum auction plan "in the next one to two months."

The FCC will conduct the auction by year end.

The narrowband auction is set to go this summer, he said.

Despite the wrangling over PCS, the Clinton task force bucks up the Information Superhighway by citing dozens of successful networking projects.

Brown said the task force is seeking public comment on its report instead of making formal recommendations.

"We felt it was important that this not come out as the government saying what the answer is," he said. ☒

The NII: Easier said than done

The Clinton administration's task force describes major obstacles facing NII implementation in seven areas of the economy.

Area	Obstacle 1	Obstacle 2	Obstacle 3
Manufacturing	Small firms lack technology expertise.	Integration of old and new technologies.	R&D does not attract enough capital.
Electronic commerce	Growth is dependent on popularity.	Transactions must be secure.	Workers may be fearful for their jobs.
Health care	Social Security number vs. new health identification number.	Public/private partnerships needed.	Security of patient data.
Education	Better educational software.	More technology training for teachers.	All schools must be connected to networks.
Environmental monitoring	Massive data generated requires storage.	Interoperability among myriad systems.	Single global system may be needed.
Libraries	Massive storage requirements.	Digital conversion of materials.	Copyright protection for authors.
Government	Digital signature standard required.	More training for government workers.	Information technology procurement needs improvement.

GRAPHIC BY TERRI MITCHELL

SOURCE: DEPARTMENT OF COMMERCE, WASHINGTON, D.C.

Copies and comments

Ways to get a copy of "Putting the Information Infrastructure to Work: Report of the Information Infrastructure Task Force Committee on Applications and Technology":

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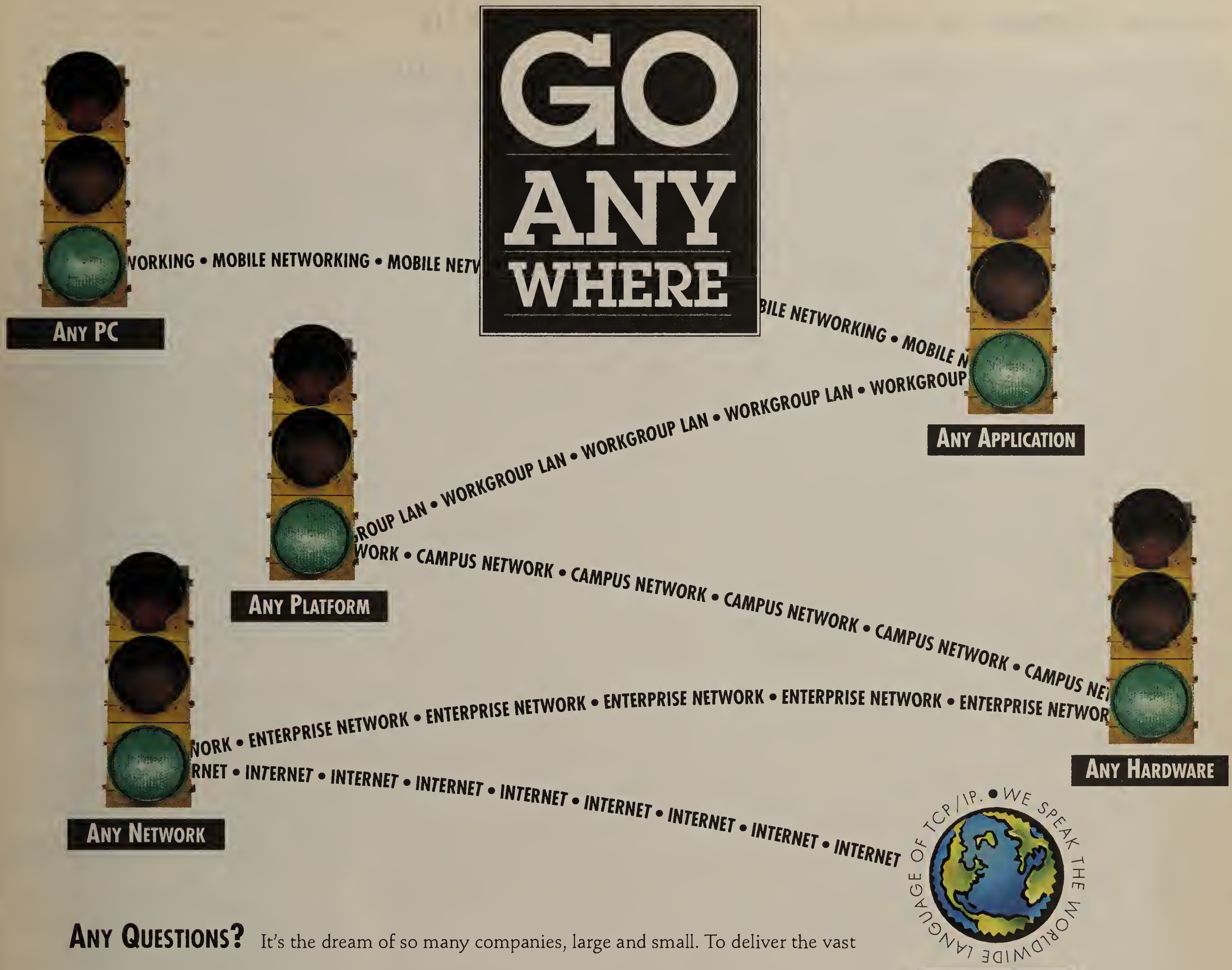
To comment on the report:

By mail: Committee on Applications and Technology
National Institute of Standards and Technology
Building 225, Room B164
Gaithersburg, Md. 20899

By phone: (301) 975-4529

By fax: (301) 948-7242

By Internet E-mail: catfexec@nist.gov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ANY PLATFORM
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Ingres, Sybase to bolster database connectivity options

BY KEVIN FOGARTY

Sybase, Inc. and The ASK Group, Inc. last week separately announced new products designed to broaden users' database connectivity options.

The Ask Group released a series of desktop-based development tools called OpenRapid Object Application Development (OpenROAD) that let corporate developers build applications compatible with databases from Ingres and other vendors.

The object-oriented tools are designed to integrate tightly with OpenIngres, a server-based set of add-on applications to the firm's core relational database management system, the OpenIngres Intelligent Database.

OpenIngres adds support to the Ingres database for Binary Large Objects, distributed transaction processing, C2-level security, closer compliance with SQL and enhanced data replication. OpenIngres is a set of modular applications that run on systems supporting Digital Equipment Corp. VAX/VMS, Hewlett-Packard Co. HP-UX, Sun Microsystems, Inc. USun/BSD and Solaris, as well as IBM AIX.

The OpenROAD development tools are a step in the right direction for The ASK Group, which has trailed competitors Oracle Corp. and Sybase in offering database application development tools, said Wayne Kernochan, director of commercial systems research for the Aberdeen Group, Inc. in Boston.

OpenROAD includes Architect, a model-based application generator; and Drivers, which link the applications to databases from not only Ingres, but also from Oracle, Sybase and Microsoft Corp.

The OpenROAD products will run initially on Windows NT; but the OpenROAD/Drivers will also run on Windows 3.1. Windows4GL starts at $1,995, Architect at $3,695, and the Drivers at $250. All will ship by June.

OPENING GATEWAYS

As expected, Sybase released a middleware product set called Enterprise Connect that combines the data access products of Sybase subsidiary Micro Decisionware, Inc. with Sybase's OmniSQL Gateway (*NW*, May 2, page 9). The new product set is a series of stand-alone gateways between Sybase SQL Server and over 20 data sources, including IBM's CICS and IMS.

Sybase made the announcement last week at its user conference in San Jose, Calif.

The gateways extend the reach of Sybase's database, but they do not replace OmniSQL. Sybase expects to add late this year access modules for connectivity with 14 other database products, including those from Informix Software, Inc. and Microsoft.

Enterprise Connect will sell for between $14,000 and $160,000, depending on options chosen and installation size.

Sybase also announced the OmniSQL Toolkit, a set of application program interfaces that let other vendors' applications link to multiple data sources through OmniSQL Gateway. Sybase expects to ship the tool kit during the third quarter; pricing has yet to be determined.

©The ASK Group: (510) 769-1400; Sybase: (800) 685-8225.

Vendors seek to regain momentum with new rollouts

BY SKIP MacASKILL

Las Vegas

Proteon, Inc., Ungermann-Bass, Inc. and Fibronics International, Inc. — three vendors whose long-term viability has been questioned due to recent financial difficulties — used last week's NetWorld+Interop 94 trade show here to prove that they are headed in the right direction.

Proteon announced enhancements to its routers and rolled out new routers for remote sites; UB, as expected, announced Asynchronous Transfer Mode (ATM) gear (*NW*, April 25, page 1); and Fibronics unveiled the first new modules for its GigaHub.

While the vendors' respective rollouts proved that development efforts are turning into deliverable products, industry analysts cautioned that all three companies still have work to do.

"It's one thing to roll out a new product; it's quite another to convince people to buy it if you can't convince them that you will be around next week to service it," said Todd Dagres, assistant vice president of equity research at The Robinson-Humphrey Company, Inc. in Atlanta. "UB, Proteon and Fibronics have good technology, but it's the [financial] viability issue they face."

Of the three firms, UB may be in the best position because its financial turnaround has already started. It recently reported its second consecutive profitable quarter, and it's complementing that with aggressively priced new products.

For example, the company last week rolled out a 16-port ATM workgroup switch, dubbed Access/ATM GeoSwitch 155. The system costs $995 per port, making UB the first vendor to offer a switch in that class for less than $1,000 per port.

UB also announced an interoperability agreement with Newbridge Networks, Inc. that ensures users the GeoSwitch will be compatible with Newbridge's wide-area ATM switch line. The new UB switch will also work with switches from LightStream Corp.

Proteon was another company last week looking to move the spotlight from its financials to its products.

The company announced support for the Border Gateway Protocol on its routers and introduced Version 15 of its routing software, which features Data Link Switching support.

Proteon also delivered its Departmental Network Exchange 350 remote office router line, which was announced in January.

In addition, the firm rolled out a prototype of its first 100VG-AnyLAN adapter card, which supports token-ring and Ethernet frames over unshielded twisted-pair wiring at 100M bit/sec.

Proteon introduced the products against a backdrop of shaky financials. The hub, router and adapter card maker has not reported a profit since the fourth quarter of 1992. But Proteon officials believe the company may be close to stopping the bleeding; last quarter's losses were only in the hundreds of thousands of dollars, compared to the millions of dollars it had been losing in previous quarters.

LAN internetwork product roundup

Vendor	Product	Price	Availability
Proteon	Border Gateway Protocol software	$750	Now
	DNX 350 router	$5,095 (stand-alone) or $3,695 (hub module)	Now
	100VG-AnyLAN adapter cards	TBA	3Q 1994
Fibronics	LC362 (12-port token ring)	$1,990	July
	LC366 (16-port token ring)	$2,190	July
	LC342 (12-port Ethernet)	$1,290	Now
	LC344 (24-port Ethernet)	$1,990	September
	LC348 (4-port Ethernet interface)	$1,190	Now
	CC427 (4-port voice card)	$1,000	Now
UB	Access/ATM GeoSwitch 155	$15,920	Year end
	4-port interface switch module	$3,995	Year end

TBA = To be announced

"I'm very concerned about Proteon's financial situation, but it's their software that puts them head and shoulders above its competitors," said Bob Fisher, telecommunications specialist and a Proteon user at First of America Bank Corp. in Kalamazoo, Mich. "Even if it gets bought out by someone, the software will still exist. I'll just access it through a different hardware platform."

FIBRONICS' EFFORT

Another company that needs its marketing effort to come around is Fibronics.

The hub maker last week introduced the first hub modules for its GigaHub intelligent switching hub, which was rolled out last summer and had been using modules from its immediate predecessor — the MultiNet Hub.

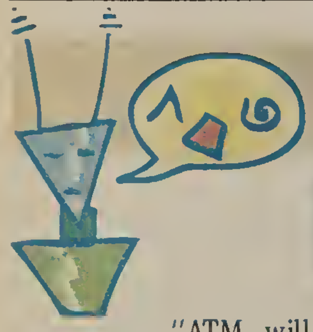
The company has been struggling financially and hopes GigaHub will be its ticket back to profitability.

Fred McClimans, principal at consultancy Decisis, Inc., in Herndon, Va., said Fibronics is worth a look by users.

"In order to strike it big, Fibronics needs to build new name recognition, shed the mantle of being an FDDI-only company and convince users it can service them," he said.

"It also needs to meet their application needs and provide a migration path to higher speed networks such as ATM," he added.

©Proteon: (508) 898-2800; Fibronics: (617) 826-0099; UB: (800) 777-4526.



CyberSpeak: *Voices from the reader network*

How much interest do you have in bringing Asynchronous Transfer Mode to the desktop?

"ATM will eventually be important, but I think it's sometime out. The wild card has always been multimedia — ATM is very well suited for multimedia applications.

With switched LAN technology, even if you have improved throughput, there's not the support for constant bit rate traffic. So that could drive it faster, but I don't think anybody sees the 'killer' multimedia application yet. I think what will happen over the next few years is that switched LANs will migrate toward ATM."

David Stacy, principal technical staff member, NEC Corp.

"Right now we have no plans for ATM to the desktop. We're perhaps in a unique situation because we have our own private [Synchronous Optical Network system] that carries all our communications traffic [throughout northern Illinois]. We're looking at running ATM over that SONET network and between wiring hubs within buildings. But Ethernet is doing the trick just fine right now. In the next year or two, we might need switched Ethernet to some desktops with heavy-duty engineering applications and ATM to servers. But we haven't begun to see the demand for ATM all the way to the desk yet."

Kurt Muehlbauer, supervising analyst, Commonwealth Edison Co., Chicago

"For me, there isn't interest for going ATM directly to the desktop. My interest is taking ATM and using it as a backbone. As far as ATM to the desktop, the only applications I see right now that really need that are the multimedia — bandwidth-intensive stuff that requires a continuous connection. Even though I have software engineers and hardware engineers at workstations, for most of those people, I don't need that kind of bandwidth. Even my AutoCAD guys doing 3-D emulation, if I give them a dedicated 10M bit/sec pipe that's EtherSwitched or something, they're typically pretty happy."

Steven Phillpott, MIS manager, Applied Digital Access, San Diego

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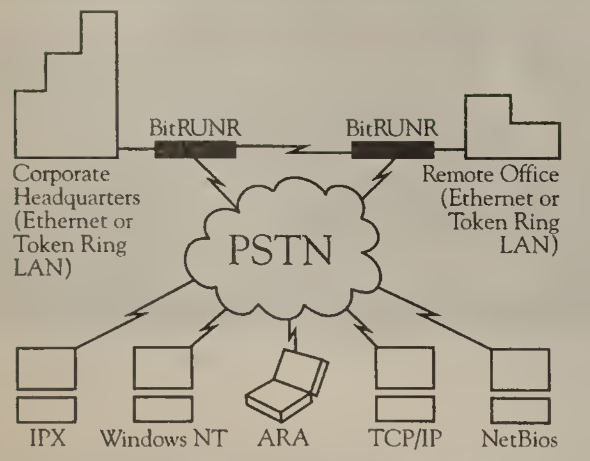
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1 Industry: (check one only)

01. ☐ Manufacturers (other)
02. ☐ Finance/Banking
03. ☐ Insurance/Real Estate/Legal
04 ☐ Healthcare Services
05. ☐ Hospitality
06. ☐ Retail/Wholesale Trade/Business Services
07. ☐ Transportation
08 ☐ Utilities
09. ☐ Education
10. ☐ Process Industries (Mining/Construction/ Petroleum Refining/Agriculture/Forestry)
11. ☐ Government (Federal/State/Local)
12. ☐ Military
13. ☐ Aerospace
14 ☐ Consultants (Independent)
15 ☐ Carriers/Interconnects
16. ☐ Manufacturers (Computer/Communications)
17. ☐ VAR/VAD/VAN/Systems Houses/ Software Houses
18. ☐ Distributors,Communications/Computers
19 ☐ Other________________

2 What is your Job Function? (check one only)

NETWORK IS Management:

1. ☐ Networking Management
2. ☐ LAN Management
3 ☐ Datacom/Telecom Management
4 ☐ IS,IT,MIS,Systems Management
5 ☐ Engineering Management

CORPORATE MANAGEMENT:

6. ☐ Corporate Management (CIO,CEO,PRES,VP, DIR,MGR,Financial Management)
7. ☐ Consultant (Independent)
8. ☐ Other________________

3 What is the total number of sites for which you have purchase influence? (check one only)

1 ☐ 100+
2 ☐ 50 - 99
3. ☐ 20 - 49
4 ☐ 10 - 19
5. ☐ 2 - 9
6. ☐ 1
7. ☐ None

4 What is your scope and involvement in purchasing decisions for network products & services for your enterprise?

A. SCOPE
(check one only)

1 ☐ Corporatewide
2. ☐ Multienterprise
3 ☐ Departmental
4. ☐ None

B. INVOLVEMENT
(check all that apply)

1. ☐ Recommend/Specify
2. ☐ Approve
3. ☐ Evaluate
4. ☐ Determine the need
5. ☐ None

5 Check ALL that apply in columns A and B:

A: I am involved in the purchase of the following products/services.

B: I plan to purchase the following products/services.

A B LOCAL AREA NETWORKS

☐ 01 ☐ Local Area Networks
☐ 02. ☐ LAN Operating Systems Software
☐ 03. ☐ LAN Services
☐ 04 ☐ LAN Storage Devices (optical,tape,disk,etc.)
☐ 05. ☐ LAN Backup systems (optical,tape,disk,etc.)
☐ 06. ☐ Network Test Equipment
☐ 07 ☐ Intelligent Hubs
☐ 08. ☐ Cables, Connectors, Baluns
☐ 09. ☐ UPS
☐ 10. ☐ Network Adapter boards
☐ 11 ☐ Peer-to-Peer LANs
☐ 12. ☐ Wireless Networks
☐ 13 ☐ SNMP Network Management
☐ 14 ☐ ATM (Asynchronous Transfer Mode)
☐ 15. ☐ Remote Access LANs

A B NETWORK SERVERS

☐ 16. ☐ LAN Servers
☐ 17 ☐ File Servers/Applications Servers
☐ 18. ☐ Print Servers
☐ 19 ☐ Communications Servers/Fax Servers
☐ 20 ☐ Data Base Servers (Oracle, Sybase, etc.)
☐ 21 ☐ Superservers
☐ 22 ☐ Terminal Servers
☐ 23 ☐ Remote Access Servers

Involved Plan to Purchase

A B INTERNETWORKING

☐ 24 ☐ Bridges
☐ 25. ☐ Routers
☐ 26. ☐ Gateways
☐ 27. ☐ Bridge/Routers
☐ 28. ☐ Intelligent Hubs
☐ 29. ☐ Communications Servers

A B COMPUTERS/PERIPHERALS

☐ 30. ☐ Micros/PCs
☐ 31. ☐ Minis
☐ 32. ☐ Mainframes
☐ 33. ☐ Pen-Based
☐ 34. ☐ Laptops
☐ 35. ☐ Workstations
☐ 36. ☐ Image Processing Workstations
☐ 37. ☐ Front-End Processors
☐ 38. ☐ Terminals
☐ 39 ☐ Printers
☐ 40. ☐ Cluster Controllers
☐ 41. ☐ Fax Machines
☐ 42. ☐ X-Terminals

A B SOFTWARE/APPLICATIONS

☐ 43. ☐ Network Management
☐ 44. ☐ Micro to Mainframe
☐ 45. ☐ Security
☐ 46. ☐ Communication/Terminal Emulation
☐ 47. ☐ Word Processing
☐ 48. ☐ Operating Systems
☐ 49. ☐ Business Applications (Finance/Mfg/HR/etc.)
☐ 50. ☐ Applications Development
☐ 51. ☐ Data Base Management
☐ 52. ☐ Spreadsheet
☐ 53. ☐ Groupware
☐ 54. ☐ EDI
☐ 55. ☐ E-Mail
☐ 56. ☐ Windows/Graphical User Interface
☐ 57. ☐ 4GL Development
☐ 58. ☐ Multimedia
☐ 59. ☐ Graphics
☐ 60. ☐ Remote Access

A B WIDE AREA NETWORKS

☐ 61. ☐ Modems (9.6K bps and over)
☐ 62. ☐ Modems (under 9.6K bps)
☐ 63. ☐ T-1
☐ 64. ☐ T-3
☐ 65. ☐ Fractional T-1
☐ 66. ☐ Data Switches
☐ 67. ☐ SMDS
☐ 68. ☐ ATM (Asynchronous Transfer Mode)
☐ 69. ☐ Matrix Switches
☐ 70. ☐ Packet Switches
☐ 71. ☐ Protocol Converters
☐ 72. ☐ Diagnostic/Test Equipment
☐ 73. ☐ DSU/CSU
☐ 74. ☐ Microwave
☐ 75. ☐ Fax Boards/Modems
☐ 76. ☐ VSAT
☐ 77. ☐ Fiber Optic
☐ 78. ☐ Satellite
☐ 79. ☐ ISDN
☐ 80. ☐ PBXs (over 1000 lines)
☐ 81. ☐ PBXs (under 1000 lines)
☐ 82. ☐ Automatic Call Distributors
☐ 83. ☐ Voice Messaging Systems
☐ 84 ☐ Videoconferencing/Teleconferencing Systems
☐ 85. ☐ Voice Response/Processing
☐ 86. ☐ Dedicated Leased Line
☐ 87. ☐ Switched Data
☐ 88. ☐ Centrex
☐ 89. ☐ E-Mail/Online Services
☐ 90. ☐ Image Processing
☐ 91. ☐ Local Services
☐ 92. ☐ WATS/MTs
☐ 93. ☐ International
☐ 94. ☐ Virtual Networks
☐ 95. ☐ Frame Relay
☐ 96. ☐ Value Added Services
☐ XX. ☐ None of the above(1-96)

6 What is the total number of A: LANs B: Workstations/Nodes in your organization?

	LANs A		Workstations/ Nodes B
1.	☐	5,000+	☐
2.	☐	1,000 - 4,999	☐
3.	☐	100 - 999	☐
4.	☐	50 - 99	☐
5.	☐	10 - 49	☐
6.	☐	9 or less	☐

7 Which of the following network platforms are currently installed/planned? (check all that apply)

NETWORK ARCHITECTURES

Installed Planned

A B

☐ 01. ☐ SNA
☐ 02. ☐ DECNET
☐ 03 ☐ MAP/TOP
☐ 04 ☐ TCP/IP
☐ 05. ☐ DCA (Unisys)
☐ 06. ☐ X.25
☐ 07 ☐ Novell IPX/SPX
☐ 08. ☐ APPC/APPN/LU6.2
☐ 09. ☐ NETBIOS
☐ 10 ☐ OSI

Installed Planned

A B

☐ 11. ☐ APPLETALK
☐ 12. ☐ OTHER________________

LAN OPERATING SYSTEM

☐ 13. ☐ LOCALTALK (APPLETALK)
☐ 14 ☐ BANYAN (VINES)
☐ 15. ☐ DCA (IRMALAN)
☐ 16. ☐ DCA (10-NET)
☐ 17. ☐ IBM (LAN SERVER)
☐ 18. ☐ IBM (PC LAN PROGRAM)
☐ 19. ☐ MICROSOFT (LAN MANAGER)
☐ 20. ☐ UNGERMANN-BASS (NET/1)
☐ 21. ☐ NOVELL (NETWARE,2X,3X,4X)
☐ 22. ☐ PROTEON (PRONET)
☐ 23. ☐ SITKA (TOPS)
☐ 24. ☐ 3COM (3+,3+OPEN)
☐ 25. ☐ ARTISOFT (LANTASTIC)
☐ 26. ☐ HAYES (LANSTEP)
☐ 27. ☐ DEC (PATHWORKS)
☐ 28. ☐ OTHER________________

LAN ENVIRONMENT

☐ 29. ☐ 4M TOKEN RING
☐ 30. ☐ 16M TOKEN RING
☐ 31. ☐ ARCNET
☐ 32. ☐ ETHERNET
☐ 33. ☐ STARLAN
☐ 34. ☐ FDDI
☐ 35. ☐ LOCAL TALK
☐ 36. ☐ 10BASE-T
☐ 37. ☐ OTHER________________

OPERATING SYSTEM

☐ 38. ☐ DOS
☐ 39. ☐ UNIX/XENIX/AIX
☐ 40. ☐ OS/2
☐ 41. ☐ OS/2 2.X
☐ 42. ☐ MVS
☐ 43. ☐ VM
☐ 44. ☐ VMS
☐ 45. ☐ MACINTOSH
☐ 46. ☐ WINDOWS
☐ 47. ☐ WINDOWS NT
☐ 48. ☐ X WINDOWS
☐ 49. ☐ SOLARIS
☐ 50. ☐ OTHER________________

8 For which areas outside of the U.S. do you have purchase influence? (check all that apply)

1. ☐ Europe
2. ☐ Asia
3. ☐ South America
4. ☐ Australia
5. ☐ Middle East
6. ☐ None

9 Which of the following hardware platforms are installed/planned in your company? (check all that apply)

	Mainframes		Minis	
	Installed	Planned	Installed	Planned
01. IBM	☐	☐	☐	☐
02. DEC	☐	☐	☐	☐
03. AMDAHL	☐	☐	☐	☐
04 AT&T	☐	☐	☐	☐
05. BULL HNIS	☐	☐	☐	☐
06. DATA GENERAL	☐	☐	☐	☐
07. HP	☐	☐	☐	☐
08. TANDEM	☐	☐	☐	☐
09. UNISYS	☐	☐	☐	☐
10. OTHER __________	☐	☐	☐	☐

MICROCOMPUTERS
(fill in the numbers)

	INSTALLED	PLANNED
11. Macintosh 20,30,40		
12 Macintosh other		
13. PCs based on Pentium		
14. PCs based on 80486		
15. PCs based on 80386		
16. PCs based on 80286		
17. PCs based on 8086/8088		
18. RISC/Unix based wkstns		
19. Other		

10 What is the estimated value of networking equipment and services that you help specify, recommend or approve annually? (check one only)

1 ☐ $100 million and over
2. ☐ $50 - $99.9 million
3. ☐ $25 - $49.9 million
4 ☐ $20 - $24.9 million
5. ☐ $10 - $19 9 million
6. ☐ $5 - $9.9 million
7. ☐ $1 - $4.9 million
8 ☐ $500,000 - $999,999
9 ☐ $499,999 or less

11 Estimated gross annual revenues of your entire company/institution: (check one only)

1 ☐ Over $10 billion
2 ☐ 1 to $9 9 billion
3. ☐ $500 to $999 9 million
4 ☐ $100 to $499 9 million
5. ☐ $50 to $99 9 million
6. ☐ $10 to $49.9 million
7. ☐ $5 to $9 9 million
8 ☐ $4.9 million or less

12 Estimated number of employees for your entire corporation: (check one only)

1 ☐ Over 10,000
2. ☐ 5,000 - 9,999
3. ☐ 2,500 - 4,999
4. ☐ 1,000 - 2,499
5 ☐ 500 - 999
6. ☐ 499 or less

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ENTERPRISE INTERNETS

Data Network Architectures, Standards, Equipment and Management

INTERNETWORKING

Blood uses router to keep data flowing

BY MICHAEL COONEY

Scottsdale, Ariz.

Facing the expensive prospect of tossing out its SNA equipment in favor of a new multiprotocol client/server system or possibly having to run parallel networks, users at Blood Systems, Inc. decided to combine the best of both worlds.

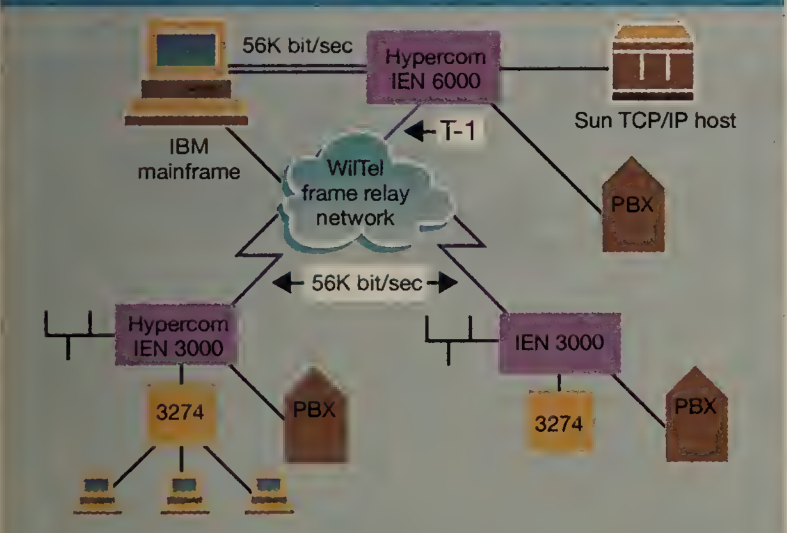
The blood bank turned to WilTel and Hypercom Corp. to provide a single backbone that supports both the new client/server environment and existing Systems Network Architecture devices.

One of the nation's largest nonprofit blood banks, Blood Systems, has an annual budget of more than $100 million and last year processed and distributed more than 1.15 million units of blood and plasma to some 600 hospitals in 18 states.

The blood bank last year embarked on a systemwide upgrade to move away from its legacy SNA applications and multidrop net to a distributed client/server environment using Transmission Control Protocol/Internet Protocol local nets and Sun Microsystems, Inc. servers.

To accommodate the mixed environment it installed Hypercom Integrated Enterprise Network (IEN) routers in each of its 48 locations. WilTel provided the frame relay connections.

The flow of Blood



Blood Systems uses Hypercom routers to bring voice, SNA and LAN data back to the main office via existing leased lines and a new frame relay backbone.

GRAPHIC BY TERRI MITCHELL

SOURCE: BLOOD SYSTEMS, PHOENIX

"We really couldn't upgrade our [Hitachi] mainframe system to do what we wanted, which was to develop client/server applications; it was cost-prohibitive," said Joe Martina, vice president of information resources at Blood Systems. "But we couldn't sacrifice the reliability of the SNA net while we moved to a distributed, multiprotocol net."

Martina said the firm avoided $300,000 in costs that would have been required to upgrade the mainframe to handle client/server demands. Instead, Blood Systems chose the Hypercom IEN because it could integrate TCP/IP LAN, SNA and voice traffic.

"We evaluated a few other vendors and found Hypercom to perform the best and retain the SNA reliability we needed," Martina said. He declined to name the other vendor equipment evaluated.

The IEN routers sit in each remote branch office and pass SNA and TCP/IP traffic over the frame relay net to a central IEN located with the mainframe at the firm's headquarters here.

"Our biggest concerns were the reliability, response times and prioritization schemes of the Hypercom boxes," Martina said. "So far, everything has worked as advertised."

Blood Systems has begun to roll out some distributed applications to utilize the net. Its first was a financial package from Platinum Technology, which consists of client software on LANs and server code on the Sun server, that lets the firm track accounts receivable and other monetary functions throughout the Blood Systems net. ◼

Utilities join forces for data sharing

New protocol allows power companies to exchange information.

BY ELLEN MESSMER

Washington, D.C.

The country's electric utilities, tied together by interlacing electric power grids, are backing a new data communications protocol the industry developed to share data used in power-generation management.

Based on Open Systems Interconnection standards, the Inter-utility Control Center Protocol (ICCP) lets utility control centers exchange critical event-driven data and power-load management information on a wide-area basis.

ICCP offers a common means of data sharing between utilities in the eastern and western U.S., geographic regions that have ascribed to two different protocols for interutility communications.

The country's utilities, even while operating as independent companies, often jointly own power-generating facilities within their neighboring area for reasons of economy and scale. They also go outside their own regions to purchase or sell electricity.

Jack Robinson, vice president of consultancy ECC, Inc. in San Jose, Calif., which assisted in developing ICCP, said the management centers assess power loads every few seconds and often need to share that data with neighboring plants because it is sometimes cheaper to buy electricity than to generate it.

These around-the-clock requirements for power management and purchasing add up to an important need to share data gathered by each utility's energy management system and Systems Communications and Data-Acquisition (SCADA) network. But until recently, the country's electric companies were divided on what protocol to use.

Utilities in the western half of the U.S. have backed the Western States Coordinating Council (WSCC) specification, developed in the early 1980s as a nonproprietary means of communication. The eastern part of the country supported the more recent IDEC protocol named after the Inter-utility Data Exchange Consortium (see graphic).

Vendors supplying energy management systems, such as Harris Corp., usually support both IDEC and WSCC, giving customers a choice.

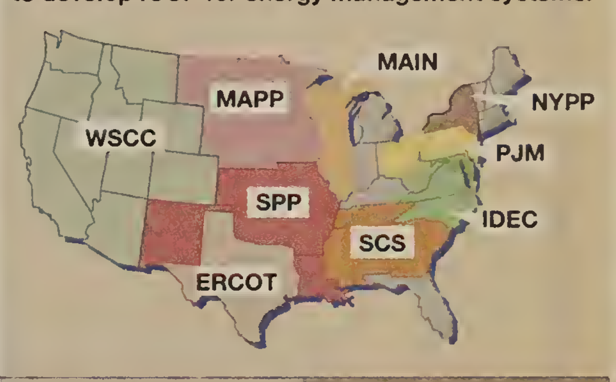
But a few years ago, the utilities decided to end the regional difference by working with the industry's technical arm, the Electrical Power Research Institute (EPRI), to develop a protocol based on OSI.

"We got the eastern and western half of the U.S. to develop the new common protocol," said Ken Snyder, supervisor of systems computer operations at Ohio Edison Co. in Columbus and cochairman of EPRI's Utility Communications Standards (UCS) working group.

Ohio Edison is a member of IDEC. The UCS cochairman, David Ambrose from the Western Area Power Administration in Loveland, Colo., is a member of WSCC.

Utilities reach for interoperability

East meets West as nation's utilities band together to develop ICCP for energy management systems.



ERCOT = Electric Reliability Council of Texas
MAIN = Mid-Atlantic Interconnected Network
MAPP = Mid-continent Area Power Pool
NYPP = New York Power Pool
PJM = Pennsylvania-Jersey-Maryland Interconnection
SCS = Southern Company Services
SPP = Southwest Power Pool

GRAPHIC BY TERRI MITCHELL

The IDEC protocol includes OSI network layers, but it uses nonstandard messaging. ICCP uses OSI routing and transport, plus an application based on the Manufacturing Messaging Specification (MMS) standard created for use in factory-floor operations.

ICCP is an extension to MMS, presenting a way that utilities can exchange information based on power-generation events and periodic updates to databases.

"This protocol allows you to write to a transfer-set object, which then allows you to exchange periodic or event-driven data," Robinson said. "You can do remote control or signal

See Utilities, *page 14*

BRIEFS

LEGENT Corp. last week said it will integrate its Paradigm **trouble-ticketing application** with Novell, Inc.'s NetWare Management System (NMS).

Paradigm, which also runs on Hewlett-Packard Co.'s OpenView, SunConnect's SunNet Manager and IBM's NetView/6000 platforms, will for the first time allow NMS users to launch a trouble ticket when a problem is detected on a NetWare local-area network.

By supporting NMS, users can now have consistent problem management at the enterprise and departmental levels, LEGENT said.

The application is activated when a problem is detected by the management platform on which it runs. If the initial service provider cannot attend to the problem, Paradigm will escalate it to a higher level attendant.

Paradigm for NMS will be available in the third quarter. The application will cost $4,995 for a package of five Windows clients, a Unix server, an administrative client and an interface to NMS.

LEGENT: (800) 949-5468.

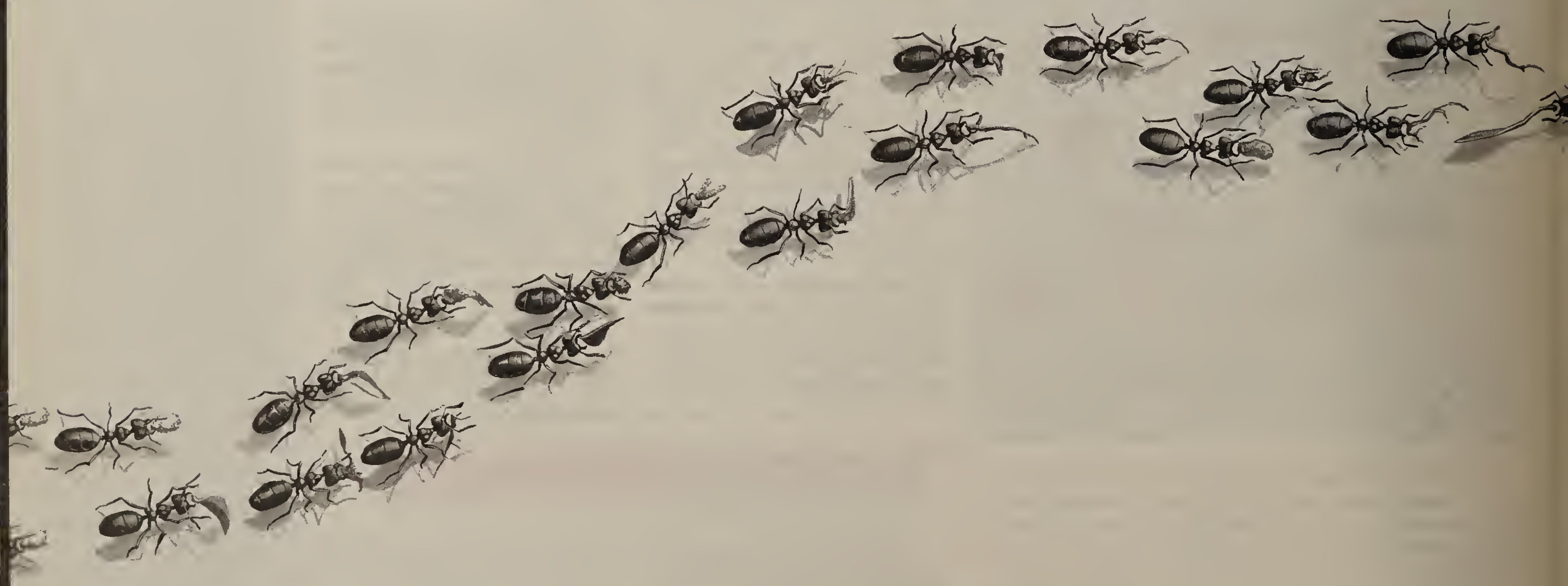
The **Open Software Foundation, Inc. (OSF)** last week announced pricing for the Network Management Option (NMO) component in the **Distributed Management Environment (DME).**

NMO is a set of application program interfaces that allows users and vendors to develop management applications that use the Simple Network Management Protocol and the Common Management Information Protocol. DME's other component is Distributed Services, which includes management services such as software license tracking and distribution for systems distributed throughout a network.

NMO Version 1.0 source code costs $120,000 for a full-distribution license and $12,000 for a limited-function license. A full-distribution license allows vendors to sell NMO code to users, while a limited-distribution license is for internal use only.

NMO 1.0 object code costs $150 for a manager application and $1.50 for an agent application. Unlimited copies of NMO 1.0 are available for $60,000 per year.

OSF: (617) 621-8700.



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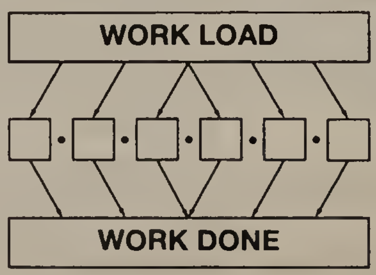

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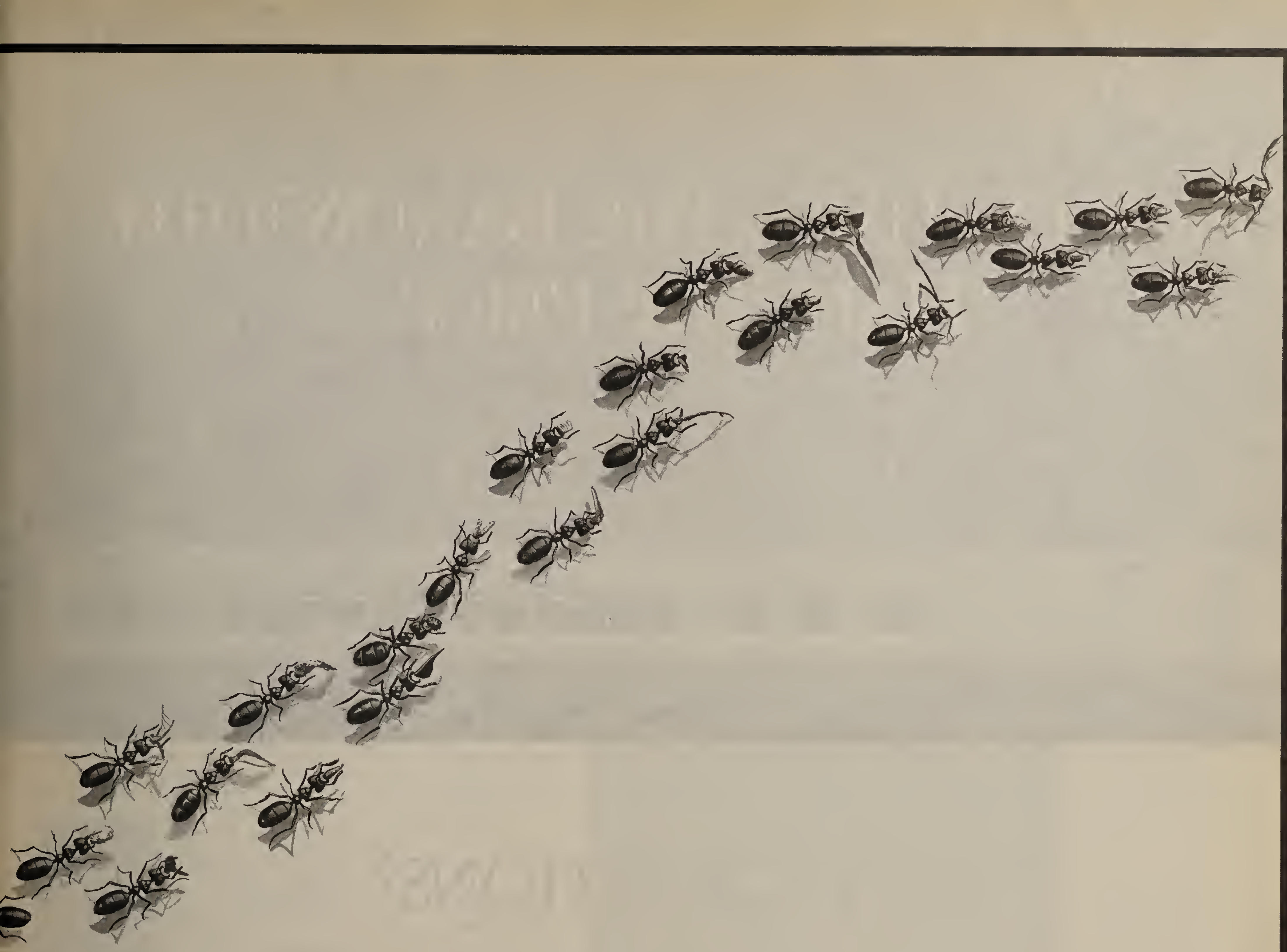

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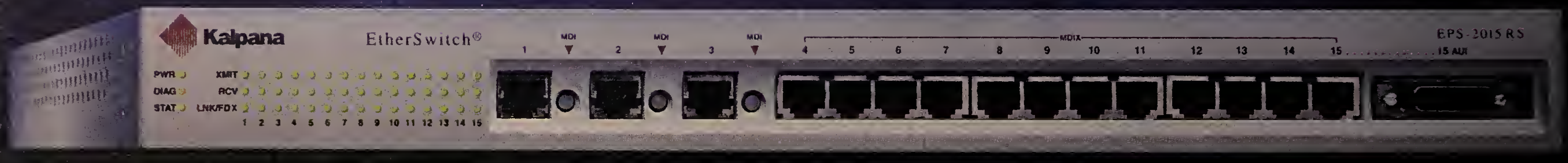

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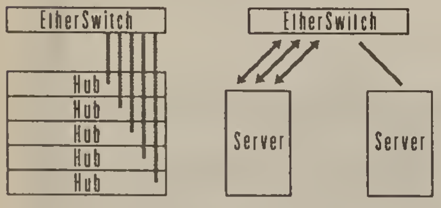

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Circle Reader Service #13

"Ethernet Switches Evaluated," Data Communication, March 1994. EtherSwitch is a registered trademark of Kalpana Inc. From outside the United States, please call 408-749-1600.

Vendors pump up sub T-1 muxes

BY MICHAEL COONEY

Las Vegas

Users looking to save money on data and voice transmission costs while expanding their enterprise networks got a boost last week when two of the biggest vendors of sub T-1 multiplexers announced new technology.

Micom Communications Corp. and Pacific Communications Sciences, Inc. (PCSI) boosted the size, speed and capacity of their industry-leading muxes.

Micom doubled the size of its Marathon 10K Data/Voice Network Server with the introduction of the Marathon 20K. The Marathon 20K integrates local-area data, voice and facsimile traffic for transmission over wide-area trunks.

The Marathon 20K can support as many as six 64K bit/sec or seven 56K bit/sec wide-area links or three 128K bit/sec links, which effectively doubles the amount of lines supported in its current high-end Marathon 10K box.

According to Ken Guy, vice president of corporate strategy and business development, the Marathon 20K is positioned to support users with 20 to 100 remote sites, whereas the Marathon 10K supports about 10 to 50 sites.

"With this announcement, less equipment is needed to build larger nets," Guy said. "The Marathon 20K gives users a tool to build more cost-effective private networks while allowing them to easily expand existing environments."

The Marathon 20K is available now starting at $7,450.

PCSI, Micom's chief competitor, also unveiled a new mux, the Access Plus 100 Integrated Access Multiplexer. The Access Plus 100 fills out PCSI's Clarity Series family of voice, data and fax communications equipment. The new box supports as many as 30 voice/fax channels, 16 data channels or T-1/E-1 interfaces. Voice channels may be compressed as low as 5.3K bit/sec using PCSI's integrated voice compression technology. Group III fax transmissions are automatically supported on any voice channel.

The Access Plus 100's hybrid circuit/packet architecture lets each data channel be individually configured for either time-divi-

See T-1, *page 15*

Utilities

Continued from page 10

the failure or success of a control operation."

EPRI has submitted the ICCP specification to the International Standards Organization as Telecommunications Access Service Element 2, an extension to MMS. However, its acceptance outside North America is doubtful since European utilities are backing their own utility standard.

The first demonstration of a fully featured ICCP implementation is scheduled for August. EPRI has funded a three-node network between sites at the Western Area Power Administration, Ohio Edison and Melbourne, Fla.-based Harris.

At each site, energy management systems will be connected to a local-area network with Digital Equipment Corp. and Motorola Computer Group Unix machines as front-end processors running ICCP software from Ann Arbor, Mich.-based Open Network Engineering, Inc.

BAKER

"We're supplying the MMS and OSI software," said Bruce Baker, president of the company. "The utilities will be able to transmit data in real time."

An ICCP gateway will convert data between IDEC- and WSCC-based systems connected by an X.25 network. "A lot will depend on this demo," said Ohio Edison's Snyder. "This is a new feature – using MMS."

Other energy management systems vendors, including ESCA Corp. and Siemens-EMPROS, Inc., have already implemented subsets of ICCP. But even when vendor products become widely available, it may take some time to dislodge the IDEC, WSCC and proprietary protocols.

Ohio Edison, for example, is just now establishing a six-node interconnected IDEC net with partners that include Allegheny Power Systems and American Electric Power Co.

"But ICCP will have a much larger base," Snyder pointed out.

A survey prepared by Joe Waggoner, technology consultant at utility Central and South West Services, shows that a large number of utilities across the country have made ICCP the long-term strategic direction in their energy management and SCADA networks.

Waggoner's report, to be released next week, concluded that ICCP is on course to replace the existing WSCC and IDEC protocols, as well as proprietary protocols.

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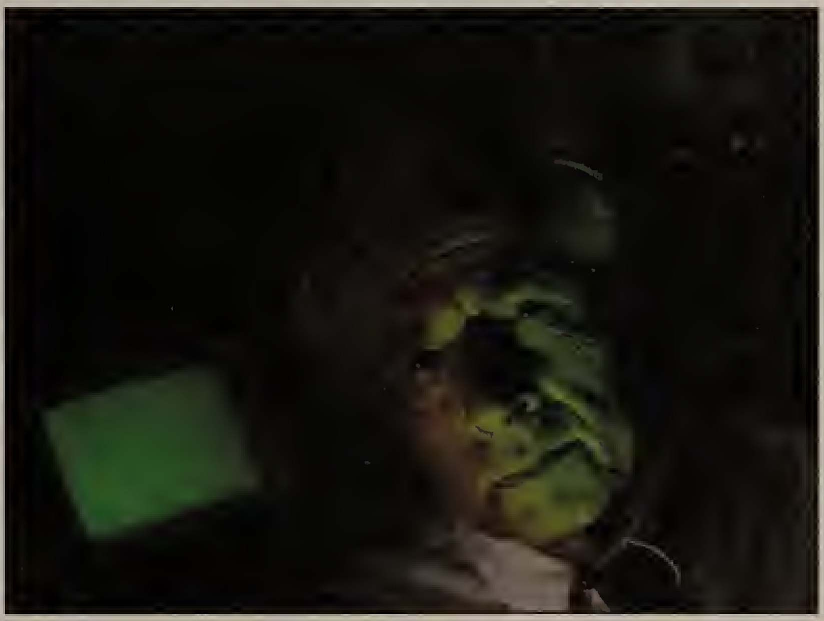

Bill Jones, MIS, age 38

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Circle Reader Service #2

Digital rolls out Internet security device

BY JIM DUFFY

Maynard, Mass.

Digital Equipment Corp. has unveiled a service and software offering designed to protect user nets from intrusion via the Internet.

The new offering, Screening External Access Link (SEAL), comprises security consulting and a programmable gateway that serves as a fire wall for private nets. The gateway guards private networks and gives users access to the Internet and other Transmission Control Protocol/Internet Protocol nets.

The gateway is a Digital computer running Ultrix or DEC OSF/1, with software that provides access to the Internet for applications such as electronic mail, file transfer, remote terminal access, information services and conferences. The software also detects unauthorized net probing by Internet hackers trying to access the user's private net, as well as auditing of access attempts.

SEAL security consultation includes Internet security policy development and rules definitions, installation and configuration of customized software, as well as training in the operation of the gateway.

With its SEAL offering, Digital is playing to the fears of the ever-increasing number of companies connecting to the Internet. Internet connections are growing at 100% per year, said Jim Hogan, Digital vice president of global communications, which means the risk of private network intrusion is increasing, as well.

Currently, there are varying degrees of Internet security available to users. A direct Internet connection offers virtually no security. Connection through a router offers a low level of security because most have some filtering capabilities, Hogan explained. And other gateway configurations do not offer the level of security that SEAL does, he added.

"Private network addresses are not directly reachable from the Internet [through SEAL]," Hogan said.

Villars expects Digital's competitors, such as Sun Microsystems, Inc., Hewlett-Packard Co. and IBM, to soon enter this market.

SEAL supports Digital Pathways, Inc.'s SecureNet Key and Security Dynamics' authentication technology.

SEAL is available in the U.S., Canada, Latin America and Europe, and will be available in Asia later this year. Prices start at $25,000.

ⒸDigital: (800) 344-4825.

The Internet today

- Largest connection of networks in the world, linking:
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  - 25 million people
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- Forerunner of the Information Superhighway

GRAPHIC BY TERRI MITCHELL   SOURCE: DIGITAL, MAYNARD, MASS.

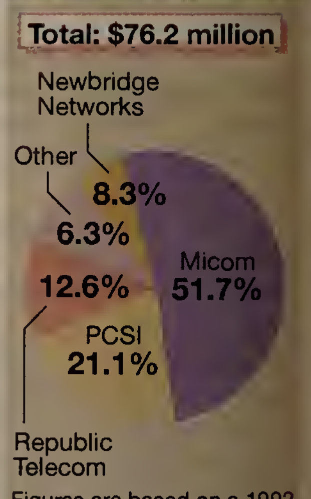
T-1

Continued from page 14

sion multiplexing (TDM) or packet multiplexing. Data can be transported in TDM mode at rates from 1,200 bit/sec to T-1/E-1 rates. As many as 16 asynchronous, High-Level Data Link Control, Synchronous Data Link Control and bisynchronous ports of up to 64K bit/sec each can be multiplexed onto a single link.

The Access Plus 100 also supports a frame relay interface, allowing users to send synchronous or asynchronous data transmissions over frame relay nets. It will be available by the third quarter with prices ranging from $6,000 to $15,000.

Sub T-1 mux market breakdown



Figures are based on a 1992 survey of the U.S. market.

SOURCE: INTERNATIONAL DATA CORP. FRAMINGHAM, MASS.
GRAPHIC BY TERRI MITCHELL

Curtis Price, a research analyst with International Data Corp. in Framingham, Mass., said Micom's products are well suited for users with a heavy emphasis on data and lower speed lines, while PCSI's are more attuned to users with higher bandwidth requirements.

According to Price, transmission costs represent 30% to 35% of corporate networking budgets and that the savings incurred through lower transmission costs can generally recover the cost of the new equipment within 16 months.

ⒸMicom: (805) 583-8600; PCSI: (619) 535-9500.

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- Discover the driving forces behind ATM, and how cell switching technology may revolutionize business communication.
- Prepare for the next generation of internetworking challenges: Frame Relay/SMDS, Frame Relay/ATM and SMDS/ATM connections.
- Learn the signaling protocols that are used to establish ATM or Frame Relay connections.
- Understand the differences between packet switching and cell switching.
- Consider broadband network management architectures and protocols, such as the Local Management Interfaces (LMI) and the Customer Network Management (CNM) systems.
- Contrast the operation of Frame Relay and X.25 protocols.
- Learn how existing transport technologies such as TCP/IP and Novell's NetWare can be integrated with broadband protocols.
- Understand how SONET and fiber optic transmission will fit into broadband networking.
- See how SNMP will play a key role in broadband network management.
- Be prepared to evaluate the broadband service offerings from the Local Exchange Carriers (LECs) and Inter-Exchange Carriers (IXCs).
- Discover the roles of the broadband implementers: the ATM Forum, the Frame Relay Forum and the SMDS Interest Group.
- Obtain the status of the current standards for ATM, Frame Relay and SMDS.

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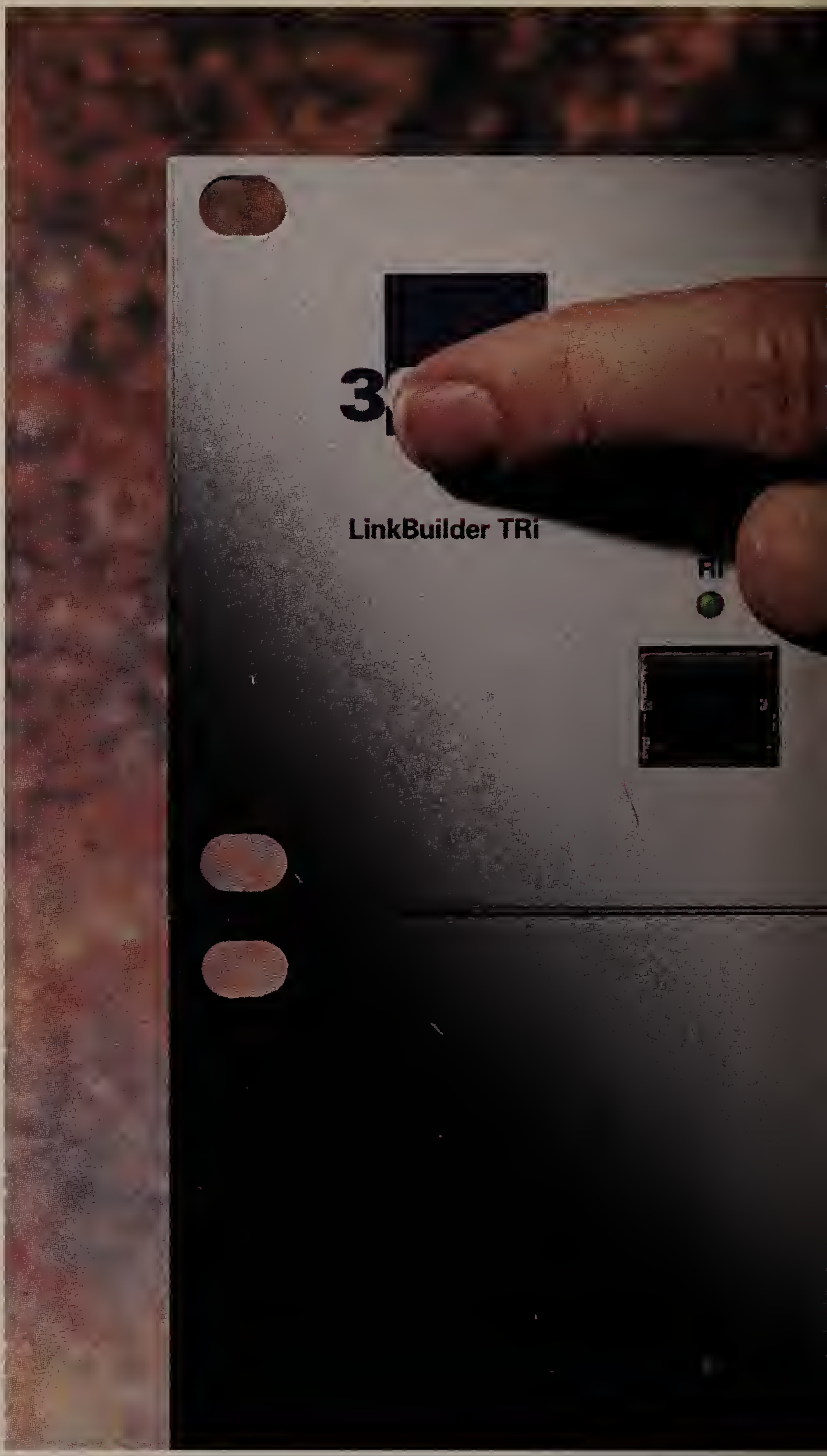

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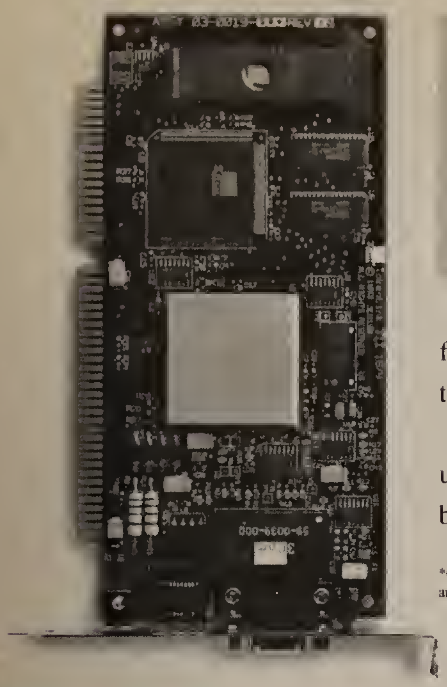

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Circle Reader Service #10

Firm broadens intelligence, reign of management system

BY JIM DUFFY

San Jose, Calif.

Boole & Babbage, Inc. last week unveiled a new release of its network and systems management software that supports a wider range of devices and has enhanced automation capabilities.

Release 3.1 of the company's Command/Post software supports new terminal emulators and application program interfaces (API) so users can automate the operations of element management systems. It also features device-specific libraries that read messages generated by those devices and prioritizes alerts.

Command/Post is a high-end management system that interfaces to management systems used to govern specific types of equipment in an enterprise network. It filters, prioritizes and correlates alerts from these element managers so users can view network events from an enterprise level, and allows network managers to issue commands to element managers through terminal emulation.

Command/Post runs on a Sun Microsystems, Inc. SPARCstation.

The new terminal emulators in Release 3.1 include those for Digital Equipment Corp.'s VT-100, VT-200 and VT-320 displays, Hewlett-Packard Co.'s 2392A and 2622A terminals, and IBM's 3151 unit. It also supports terminals from Data General Corp., Prime Computer, Inc., Tandem Computers, Inc., TeleVideo Systems, Inc. and Wyse Technology.

Release 3.1 also supports APIs to those emulators so users can develop applications for issuing commands to element managers through the emulated terminal screen. Commands can be issued manually or through Command/Post's automated scripting language, Autocommand.

"Now we emulate all these consoles in a very specific and a very unique way, which is native to those particular devices," said Jack Brown, director of marketing for distributed systems management at Boole & Babbage.

"VT is specific to the Digital world," he said. "Although you're running on Command/Post, if a DEC VAX sends you a message saying that there's some problem somewhere in the DECnet environment, we would get that message, translate it, put it up as an alert, and then the operator might want to go in and assume command and control over that DEC system."

"Now we emulate all these consoles in a very specific and a very unique way, which is native to those particular devices."

The new device-specific libraries are called Connection Banks, which contain documentation and predefined connectivity path descriptions for network and systems elements that are designed to speed connection to and management of various devices and management systems.

A single Connection Bank has detailed knowledge of the types of messages that managed systems can generate, and certain messages can be prioritized to automatically trigger alarms.

Release 3.1 includes Connection Banks for Cisco Systems, Inc. routers, Novell, Inc. NetWare 3.11, Ascom Timeplex, Inc. and Network Equipment Technologies, Inc. multiplexers, SunConnect's SunNet Manager 2.0 and NEC Corp.'s NEAX 2400 private branch exchange.

At your Command/Post

Enhancements to Release 3.1 include:

- New terminal emulators and APIs to expand automation capabiltites.
- Addition of Connection Banks to reduce time and effort needed to manage networked systems.
- Suppression of unimportant alerts to reduce complexity.

Other enhancements in Release 3.1 include the ability to recognize undefined alerts and to suppress unneeded alerts.

Some of the features of Release 3.1 were on users' wish lists.

"A couple of features in that release we specifically requested," said Tony Sousa, systems analyst at Pacific Bell's Hayward, Calif., data center. "The major one is the alert suppression routine. We have had this product for about two years, and one of the shortcomings was we had no way to prevent false alarms due to events taking place during out-of-hours operation. The suppression routine will allow us now to define windows of time when certain alert conditions will be ignored."

Command/Post 3.1 is available now. Pricing starts at $60,000.

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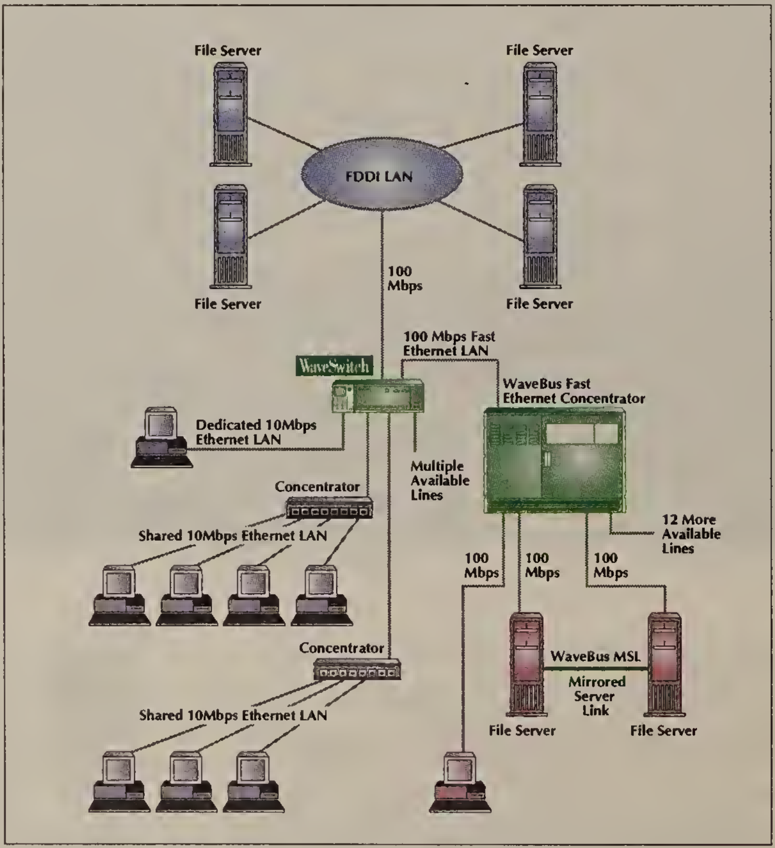

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BRIEFS

Banyan Systems, Inc. of Westborough, Mass., last week released a new version of its **Systems Network Architecture Communications Service (SCS)** that roughly doubles the number of concurrent users and logical unit sessions supported at one time. Compared to SCS 1.0, SCS 1.1 increases the number of concurrent users from 128 to 250 and the number of logical sessions supported from 254 to 512 sessions. Other new features include support for Digital Communications Associates, Inc.'s RamXpander, which reduces DOS client memory requirements; a new Windows user interface; X.25; and Apple Computer, Inc. Macintosh clients.

Available in June, SCS 1.1 will cost $2,995 for server software, and client software ranging from $2,795 for 10 clients to $15,595 for 1,000 clients.

Banyan: (508) 898-1000.

Last week, **Oracle Corp.** of Redwood Shores, Calif., began shipping drivers that allow the Oracle7 Parallel Server database to run on **Banyan Systems, Inc.'s** Enterprise Network Services (ENS) for Hewlett-Packard Co.'s HP-UX platform. The Oracle SQLNet-based driver is integrated with Banyan's StreetTalk global directory and the Banyan Internet Protocol this integration permits ENS users to directly access Oracle7 databases running on ENS for HP-UX servers.

The driver, available in July, will be sold via Oracle sales channels.

Oracle: (415) 506-7000.

Hewlett-Packard Co. has rolled out several new **workgroup printers** and introduced its next-generation HP JetDirect cards for attaching HP printers directly to local-area networks. The new printer line comprises the HP LaserJet 4 Plus and HP LaserJet 4M Plus, which cost $1,839 and $2,479, respectively. Both machines offer a 12-page-per-minute performance rate and will replace the existing eight-page-per-minute LaserJet 4 and LaserJet 4M printers. The new JetDirect cards work with all existing HP printers and plotters. They also support mixed net environments. HP has also reduced the price of its entire line of JetDirect cards for both Ethernet and token-ring environments by as much as 18%.

HP: (800) 752-0900.

Next week, **Executive Software** of Atlanta will roll out a server-based **corruption protection utility** for Microsoft Corp.'s Windows NT Advanced Server (NTAS) environment.

File Alert for Windows NTAS is a 32-bit application that can automatically detect the cause of file corruptions on networked personal computers. It can identify, for example, if the problem is with a worn-out hard disk, power surge or failure, user error, virus or software defect. If a file becomes corrupted, File Alert automatically notifies the administrator via an electronic mail message, pop-up screen or audio message on a Windows NTAS management workstation or via a log written to a file.

File Alert, available this month, costs $499.

Executive Software: (800) 829-4357.

Novell, Xerox launch document mgmt. plan

Strategy includes third-party support for Document Enabled Networking.

BY CARYN GILLOOLY

Las Vegas

Novell, Inc. and Xerox Corp. last week announced an agreement to jointly develop and market technology designed to give customers access to electronic documents on a network regardless of the documents' location or format.

Under the plan, Novell and Xerox will deliver a document management engine, dubbed Document Enabled Networking (DEN) for NetWare, as well as application program interfaces (API) to which developers can build.

The announcement, which was expected, was made at the NetWorld+Interop 94 conference here (*NW*, April 25, page 2).

When delivered in the first half of next year, DEN will be a set of NetWare Loadable Modules (NLM) for NetWare 4 servers. But as with most other NetWare services, such as telephony and imaging, users will need to employ products from other vendors to actually take advantage of DEN.

For these other vendors, Novell and Xerox by the third quarter will release the initial DEN APIs.

By year end, Novell and Xerox will bring out a software development kit to let other vendors begin building both back- and front-end applications to take advantage of the DEN NLMs.

DOCUMENTS EVERYWHERE

Today, virtually every bit of information within a company can be found on some sort of document, whether it be within a word processing file or a video clip.

"But, there's no real way to manage or track those documents," said Dennis Hamilton, principal software scientist at XSoft, a Palo Alto, Calif., subsidiary of Xerox.

Although companies have databases to keep track of the actual data and information within the organization, end users currently need to know exactly where documents and information reside in order to access what they need.

There is a mix of front- and back-end products today that will keep track of documents, but typically, vendors' document management front ends only work with their own back ends and vice versa.

"In the past, applications had to be programmed to each individual service," said Robert Young, vice president of product management at Novell's NetWare Products Division in Provo, Utah.

By conforming to the DEN specifications, however, document management application developers will be able to build front- and back-end applications independent of one another. This is virtually identical to the way Novell's database services work.

Once developers deliver products compliant with DEN, customers will be able to implement any combination of front- and back-end document management software that fits their needs.

Although the NLMs run only on NetWare 4 servers, Novell's Young stressed that DEN will work with products that collect information from any type of server on NetWare local-area networks.

GOOD INTENTIONS

As with many Novell announcements, although the company has good intentions and a good idea, analysts were frustrated that product delivery is more than eight months away.

They also questioned Novell's heavy reliance on other vendors to fulfill the document management strategy.

"It's just another architecture," said one observer who requested anonymity.

Developers interested in receiving information about the DEN technical specification can call XSoft at (800) 428-2995 or Novell at (800) 255-2561.

Hotel hits jackpot with fiber backbone network

BY SKIP MACASKILL

Las Vegas

The next time you pull the arm of a slot machine at the MGM Grand Hotel here, think of Rob Allred.

Two years ago, this MIS director for MGM Grand Hotel, Inc. was given the Herculean task of building a network for what would become the world's largest hotel, casino and theme park complex.

The network, which consists of several interconnected local-area networks running a variety of applications, such as Lotus Development Corp. Notes, electronic mail, slot machine operations and casino accounting, has been operational since the end of 1993.

"We're talking about a facility with over 5,000 hotel rooms, a medical center, a 15,000-seat arena, a theme park and one of the largest casinos in the world," Allred said.

"My department had the job of linking all those different operations together, which included a variety of different traffic and protocols," he added.

Because of the size of the undertaking, the cabling infrastructure and backbone architecture of the new network became the two most strategic decisions Allred and his staff would have to make during the project.

The team had the luxury of starting with a clean sheet of paper since the network foundation was put in place while the complex was being built last year.

COLLAPSED BACKBONE

MGM decided to go with a collapsed backbone architecture based on fiber-optic runs in the risers and Category 5 unshielded twisted-pair wiring out to the desktops.

This infrastructure addressed existing needs and prepared the hotel for future high-speed technologies such as Asynchronous Transfer Mode (ATM), which the hotel will evaluate to offer interactive video and multimedia applications in the future.

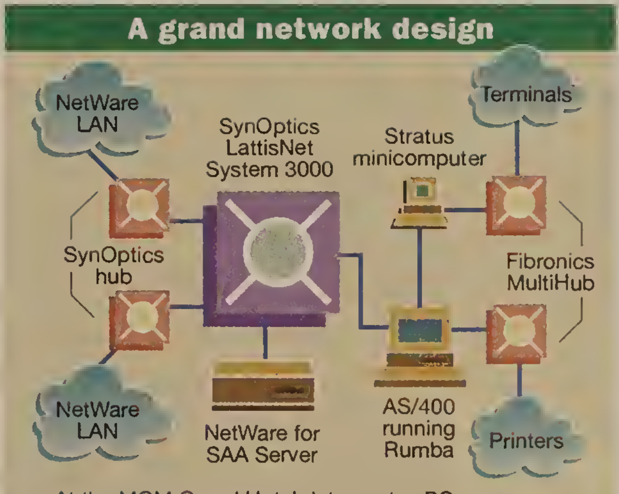
Any wiring closet less than 300 feet from the data center, which is housed in the basement of the main hotel, has been linked back with unshielded twisted-pair wiring; fiber runs out to the remaining closets. According to Allred, the network consists of five million feet of unshielded twisted-pair wiring and three million feet of fiber-optic cables.

A collapsed backbone approach, which involves wiring all subnets back to a central site where internetworking functionality is housed, was chosen because Allred wanted a centralized control point for the entire network operation.

By layering client/server applications on top of that, Allred was able to keep unnecessary traffic off the backbone, as well.

"By giving each subnet its own server, traffic for that particular workgroup can stay

See Hotel, *page 27*



At the MGM Grand Hotel data center, PC users on a NetWare LAN communicate with terminal users via a NetWare for SAA Server. Traffic flows in the opposite direction via an AS/400-based Rumba system.

GRAPHIC BY TERRI MITCHELL

Cheyenne unit outlines voice, fax and data scheme

BY CHRISTINE BURNS

Roslyn Heights, N.Y.

Cheyenne Communications, Inc. last week laid out plans to give end users at stand-alone machines, users with portable computers and those on peer-to-peer networks access to integrated facsimile, voice and data services.

The company's Architecture for Communications in the Enterprise (ACE) comprises a set of client and server-based software that will enable end users to access fax-, voice- and data-based services from a single desktop interface.

"Right now, you've got separate servers running different protocols, so it's impossible to run all these communications services on the same machine or to let a client easily use them at the same time," said Yuda Doron, chief executive officer and president of Cheyenne Communications, a Cheyenne Software, Inc. subsidiary.

Cheyenne Communications mini-profile

Based:	Roslyn Heights, N.Y.
Formed:	June 1993, as a subsidiary of Cheyenne Software, Inc.
Management:	CEO is Yuda Doron, who formerly worked for Texas Instruments, Inc.
Flagship product:	FAXserve 2.0
Employees:	400
Recent moves:	Acquired Bit Software, Inc. of Freemont, Calif., and its BitFax Professional Windows-based fax, data and voice software package.

Doron said the ACE-compliant products will work with existing networking products and include support for popular industry application program interfaces (API) such Novell, Inc.'s Message Handling Services (MHS) and Microsoft Corp.'s Messaging Application Programming Interface.

"We're not reinventing the wheel because it's not practical to talk customers out of their current platform," Doron said. "Instead, we're working on products that take into account the existing environment."

Cheyenne Communications will first deliver ACE products for the mobile and stand-alone workstation market. The company has laid the groundwork for delivering these products via its recent acquisition of Bit Software, Inc. of Fremont, Calif. Bit Software is the maker of BitFax Professional, a Windows-based package that identifies incoming phone calls and routes them to the appropriate system, whether it be a fax, voice or data system.

Doron said Cheyenne Communications plans to enhance BitFax Professional to include faxback and voiceback capabilities.

While BitFax Professional runs on a single personal computer, Cheyenne Communications later this year will add networking support that will let users of peer-to-peer networks, such as Microsoft's Windows for Workgroups and Artisoft, Inc.'s LANtastic, share modems and telephone lines.

Cheyenne Communications will develop ACE products for client/server environments that build on the company's flagship offering, the FAXserve 2.0 dedicated fax server for NetWare environments. Although Doron would not disclose delivery dates, he said the company will integrate the BitFax Professional front end with FAXserve 2.0 for ease of use and will deliver a version of FAXserve for Unix servers.

For integrated voice capabilities across the network, Cheyenne Communications will support the Novell-AT&T Telephony API on FAXserve 2.0. Data communications services consisting of local-area network-based dial-in and dial-out capabilities will be added to FAXserve, as well.

These capabilities will be built to run atop Novell's NetWare Connect, a server-based remote connectivity product that gives remote users complete access to NetWare resources and provides local and remote users with asynchronous wide-area connectivity.

Robert Harbison, president of Net-In, Inc., a consultancy in Sausalito, Calif., said Cheyenne Communications could be successful with ACE because of its support for NetWare Connect and the Novell-AT&T Telephony API.

"NetWare Connect and the telephone services in NetWare are going to be the glue for" these products, Harbison said. "It was smart for Cheyenne [Communications] to build upon NetWare because they've got a very strong 32-bit operating system doing all the work for them, and they just have to concentrate on getting all the services to work together."

✆Cheyenne Communications: (800) 243-9462.

Intel, SynOptics announce new fast Ethernet devices

BY CARA CUNNINGHAM

Paris

Intel Corp. and SynOptics Communications, Inc. have unwrapped what they claim to be the first fast Ethernet networking products.

Officials from both firms unveiled the fruits of their joint development effort to design processors for Ethernet devices that reach 100M bit/sec.

Intel is using the chip in an adapter card, called the EtherExpress Pro/100, while SynOptics will augment its LattisSwitch line of hubs with models based on the new chip, officials said.

Because of the pervasiveness of 10M bit/sec Ethernet devices, the new products will be able to operate at the traditional 10M bit/sec rate or at the fast Ethernet speed of 100M bit/sec, officials said. This migration path, added to strong user demand for greater network speeds, will speed the adoption of fast Ethernet, said James Smith, director of marketing for Intel Europe's net products division in Swindon, England.

"Within the next two years, all adapters will be 10/100 adapters, and I don't think the price delta [compared to strictly 10M bit/sec cards] will be more than 15% or 20%," he said.

In traditional Ethernet hubs, all of the attached devices are forced to share one 10M bit/sec connection, creating bottlenecks usually at the server, Smith explained. Fast Ethernet hubs, however, dedicate 10M bit/sec connections to each device attached and can establish 100M bit/sec connections with servers and workstations equipped with fast Ethernet adapters.

Intel's EtherExpress Pro/100, to be released in August for both Peripheral Connect Interface (PCI) and Extended Industry Standard Architecture (EISA) bus architectures, is designed for use in servers and high-end workstations running applications such as computer-aided design or multimedia. The card automatically detects the speed of the connected hub and adjusts itself to 10M bit/sec or 100M bit/sec accordingly.

Priced at $499 for the PCI or EISA version, the EtherExpress Pro/100 is tuned to take advantage of Intel's high-end 486 and Pentium processors. Early next year, the firm will deliver fast Ethernet cards for client PCs with Industry Standard Architecture buses.

Two new members in SynOptics' LattisSwitch System 28000 family of switching hubs can also operate at either 10M or 100M bit/sec, said Peter Tarrant, director of product management with SynOptics in Santa Clara, Calif. The new models are designed to connect workstations in need of higher speed connections or can be used at the backbone to give servers greater bandwidth, he said.

The new models include:

■ The 28115, which comes equipped with 18 ports for unshielded twisted-pair connections. It operates at either 10M or 100M bit/sec and will be available in June for $16,950.

■ The 28104, featuring 10 ports for fiber-optic connections, operates at 100M bit/sec. It will be available in December for $14,950.

The firm also said its Optivity net management software will be upgraded to work with the new hubs. Version 5.0 will be delivered in June for Unix-based net management platforms from SunConnect, Hewlett-Packard Co. and IBM, and will cost $5,995.

✆Intel: (800) 538-3373; SynOptics (408) 988-2400.

Cunningham is the Paris correspondent for IDG News Service.

PC-TO-HOST CONNECTIVITY

SunSelect beams up PC-NFS upgrade

BY CHRISTINE BURNS

Chelmsford, Mass.

SunSelect, a division of Sun Microsystems, Inc., last week released a new version of its PC-to-host connectivity software that is easier to install than previous versions and has increased support for Transmission Control Protocol/Internet Protocol addressing and naming schemes.

PC-NFS 5.1 has been reengineered to cut installation time in half and to automate the configuration of personal computers on TCP/IP networks through Dynamic Host Configuration Protocol (DHCP) support, said Luiza Aquiar, senior product manager at SunSelect.

DHCP, as written by the Internet Engineering Task Force, is client/server technology that lets a network administrator at a central management console assign IP addresses to PC-NFS clients. For mobile users, an administrator can define a pool of IP addresses that remote clients borrow when engaged in a remote session. When that session is terminated, the IP address is made available to the pool again.

"DHCP relieves a lot of headaches and manual work that was necessary when you wanted to put a PC on a TCP/IP net," Aquiar said. Previously, a network administrator would have to assign and track individual IP addresses for every PC-NFS user on the network, she said.

PC-NFS provides DHCP support only on the client, but DHCP is effective only if it is also running on the server. SunSelect is offering this server support in its SolarNet client/server networking software, which lets an administrator manage large numbers of PCs from a single desktop console. Microsoft Corp. and Hewlett-Packard Co. have also pledged DHCP support in their network operating system software.

Craig Mason, a senior technical project specialist at the Great-West Life Assurance Co. in Inglewood, Colo., said he is looking forward to using DHCP throughout his 1,000-node network. Mason is testing PC-NFS right now and plans to install SolarNet when it is available this fall.

"Getting out to every seat to get them up and running doesn't leave much time for other things," Mason said.

SunSelect PC-NFS enhancements

Supports DHCP, which automatically assigns IP addresses to PC-NFS clients.

Supports TCP/IP's DNS protocol.

Lets users access CD-ROM information via DynaText, an on-line search technology.

Contains new user interface for its Windows TELNet program.

Has more flexible printer support.

Cuts process time in half with streamlined installation program.

PC-NFS 5.1 also supports more Unix-based naming schemes, including Domain Name Service and Network Information Services. This will let PC-NFS clients be integrated into both Unix environments.

Other features of PC-NFS 5.1 include a new user interface for its Windows Telnet program. This lets users maintain connections to multiple hosts simultaneously though Windows icons.

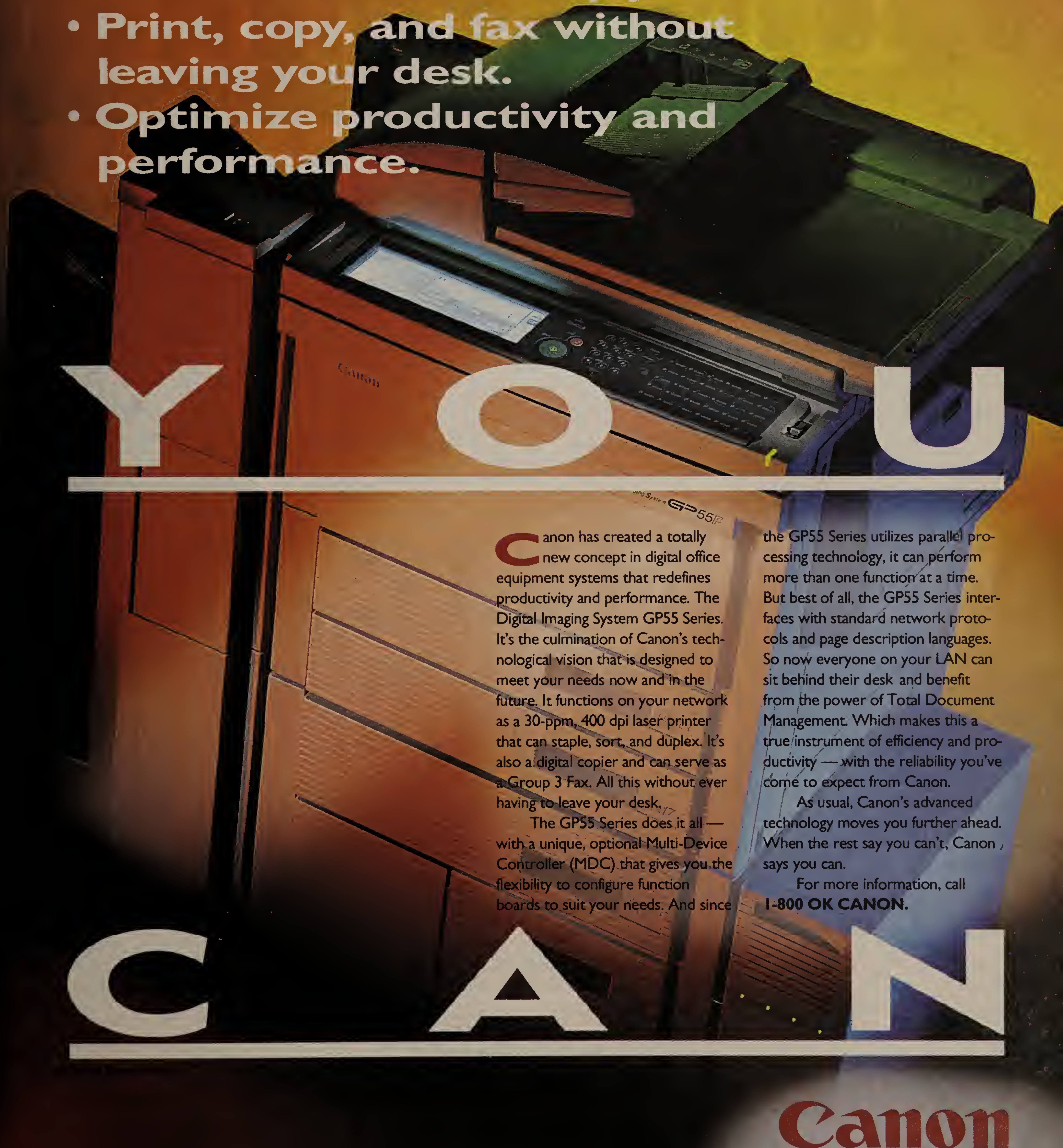
PC-NFS 5.1 also has more flexible printer support, which lets users directly use a network printing device. Previously, a PC-NFS client would have to route the print job through a Unix host.

PC-NFS 5.1 will be available later this month. New licenses begin at $325 per user, while upgrades begin at $99.

While SunSelect officials declined to reveal a time frame for the next major release of PC-NFS, they said users could expect it to support Microsoft's Virtual Device Driver (VxD) technology and the industry standard Point-to-Point Protocol (PPP).

VxDs are 32-bit programs that typically control I/O devices, such as mouses and ports, and require no memory. PPP is a remote access protocol that allows dissimilar computer devices to communicate over analog, digital and wireless connections.

✆SunSelect (508) 442-2300.



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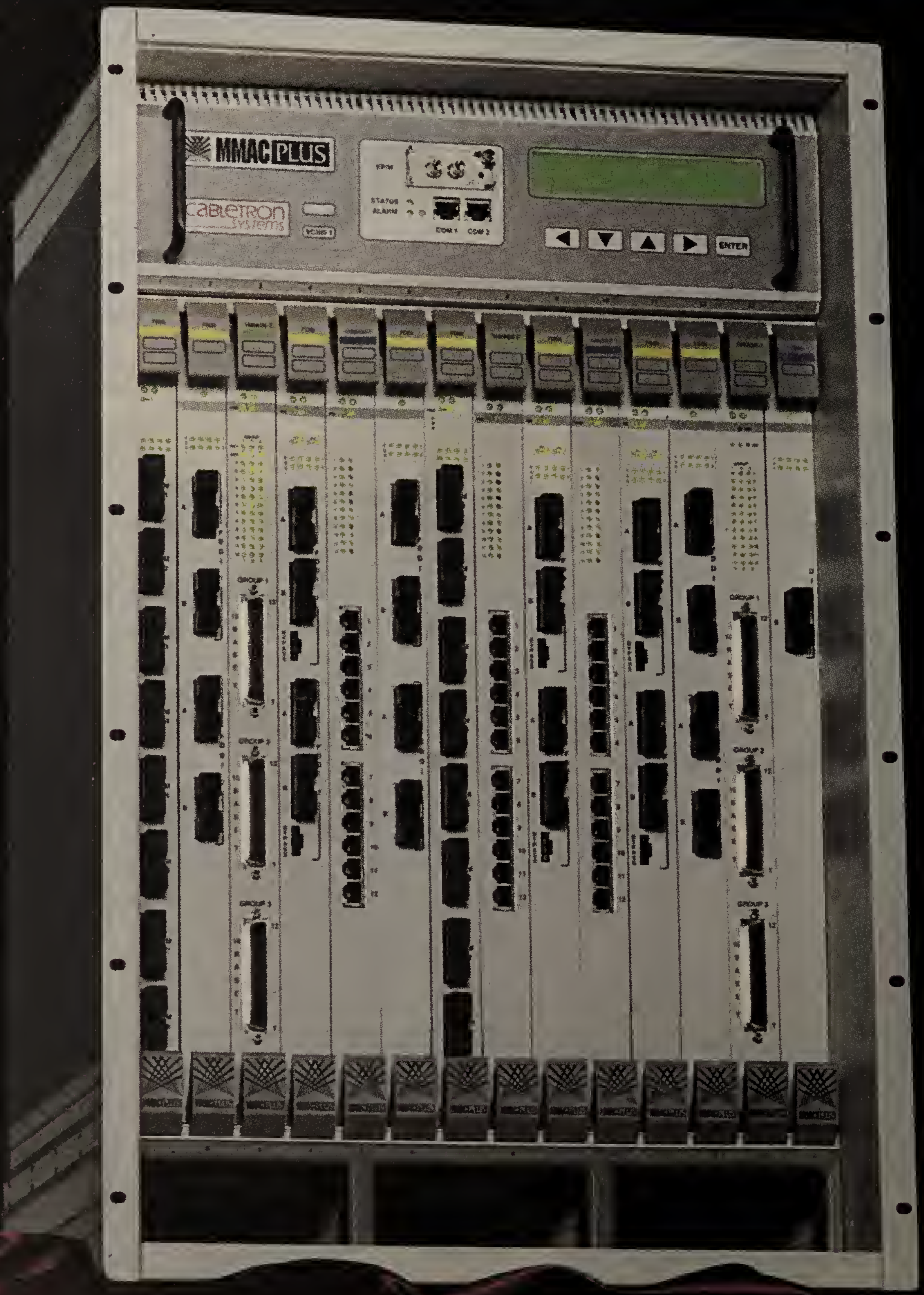

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Circle Reader Service #1

NET RESULTS

by Mark Gibbs

You are 251st in the queue, please hold

If you've suffered through the two-hour hold when calling Redmond, Wash., (complete with the hip DJ saying you are 251st in the queue) or the 24-hour call back from Provo, Utah, then you are probably more than aware of the problems involved in getting questions answered about network products.

My biggest complaint about technical support actually has nothing to do with the quality of the technicians.

Indeed, I've talked to technicians at Microsoft Corp., Novell, Inc., The Santa Cruz Operation, Inc., IBM and a hundred other companies, and I have found only a couple of really incompetent support groups.

That said, there are two major problems with technical support from vendors: first, the cost to the caller; and second, the fact that your problem is often really the vendor's problem — for example, a product bug.

The cost to the caller results from several factors. First, many vendors charge for technical support.

But then you have to throw into the cost equation that the caller also usually has to pay for the call as well as the cost of your time during what is often "The Hold from Hell."

Now if you require support because you are incapable of reading the manual or the product is complex and you can't be bothered to learn it, then charging you is completely reasonable.

But as a customer service goes, the two-hour hold and the 24-hour response are inconvenient, if not downright antibusiness.

INFORMATION TECHNOLOGY

The answer, I believe, is to use information technology rather than telephony. A pretty brave idea, eh? We'll come back to it in a moment.

The second problem with technical support is that when you finally do get an answer, it is very often that you've uncovered a fault in the product.

This really grates me. The idea of having to pay for support and to hold on the phone line just to find out that the problem you found is a bug.

This means that you have to, in effect, pay twice — once for the product and again to debug the damn thing.

But you are not defenseless against these unfair costs.

We in the network industry talk incessantly about making information technology pay off. We talk about getting connected, the Information Superhighway and the Road Warrior. All this neat techno-stuff, and yet we hardly use it ourselves.

So let's start putting all of this technology to work for us to support technology support. Sounds a little Zen-like put that way, ("What is sound of one bit setting, Glasshoppa?") but work with me people.

By way of example, I had a chat with Guy Jones, the technical support manager of Storage Dimensions, the other day. Storage Dimensions is a member of the Technical Support Alliance Network (TSANet), which is a consortium of hardware and software vendors that includes IBM, Novell, Lotus Development Corp. and Hewlett-Packard Co.

What Storage Dimensions has done is to make it possible to send an electronic mail message to its Internet host — called "techconnect@xstor.com" — and request support.

TECHCONNECT SYSTEM

For example, if you send a message in which the body contains the word "symptom" followed by the name of whatever you are having the problem with, such as "cabling, the company's techconnect system will send you a list of all relevant documentation. You can then send an E-mail message to retrieve the required documents.

Storage Dimension's system gets really neat because the company is making special access available to the other members of TSANet — at the moment only Novell has access.

So when a customer phones Novell, for example, and it concerns a topic Novell has raised with Storage Dimensions, Novell can send a priority E-mail to techconnect and retrieve status information on what Storage Dimensions has done to work out the problem.

The techconnect system is password protected so only vendors can access customer records, and even they can only retrieve information about problems that concern their own products.

I'm very impressed by this system and applaud Storage Dimensions for being so creative. Not only is the company working with its clients, but it is also working with the rest of the industry.

If other vendors can get it together to offer support through publicly accessible E-mail connections — that is, anything that connects to the Internet — we might get the cost-effective and timely support we'd all like to see.

There are two major problems with technical support from vendors: first, the cost to the caller; and second, the fact that your problem is often really the vendor's problem — for example, a product bug.

Gibbs is a consultant and writer based in Ventura, Calif. He can be reached at (805) 647-2307 or on the Internet at mgibbs@rain.org.

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Circle Reader Service #4

Hotel

Continued from page 22

local," he said. "Only traffic going between workgroups or between the PC network and terminal network has to go through the data center."

By using fiber in the backbone, Allred was able to meet existing needs and prepare for any future ones.

Since the complex covers such a wide area, he realized that running cable from some of the more distant wiring closets would result in signal time-out problems. The fiber approach allowed him to run longer distances between resources without using many repeaters.

The decision to go with Category 5 unshielded twisted pair at the desktop gave Allred a lot of flexibility for future end-user needs since that cabling scheme can support standard 10M bit/sec Ethernet as well as high-speed LAN technologies such as 100M bit/sec Ethernet, a copper version of Fiber Distributed Data Interface and ATM at speeds up to 155M bit/sec.

"The wiring infrastructure issue is not sexy and is taken for granted by a lot of people until something goes wrong; but at that point, it is usually incredibly expensive to fix if new cable has to be pulled," Allred said.

LINKING PC AND TERMINALS

The MGM net comprises a host-based network for terminal users and a Novell, Inc. NetWare LAN for personal computer users, both of which rely heavily on Ethernet wiring. Terminal users can communicate with PC users via Wall Data, Inc.'s Rumba PC-to-host package, while the PC users can communicate with terminal users via Novell's NetWare for Systems Application Architecture Server.

The terminal network is anchored by a series of host computers, including IBM's Application System/400 minicomputers and Stratus Computer Corp.'s fault-tolerant minicomputers. These systems are linked to about 900 terminals via 36 Fibronics International, Inc. MultiHub wiring hubs.

The fault-tolerant terminal net carries most of the mission-critical data and applications relating to operation of the entire complex, including hotel guest reservations, casino accounting and ticketing for shows.

A NetWare 3.12 LAN supports an additional 250 PC end users via a SynOptics Communications, Inc. LattisNet System 3000 hub and other SynOptics hubs. That network supports a number of back-office departments, such as human resources.

BENEFITS

"One of the biggest benefits of this setup is that any user located anywhere in the network can talk to other users and access information, provided the security in place permits it," Allred said.

By tapping into a master event schedule in Notes, for example, the catering department can find out where its services will be needed.

Thanks to this information sharing across the subnets, the hotel has greatly diminished the amount of paperwork that needs to be shuttled around the complex, according to Allred.

"The network is the key business tool that allows this hotel complex to operate smoothly and efficiently," he said. "Because of the infrastructure we have in place, we will be able to update it on the fly and add new technologies and services as needed."

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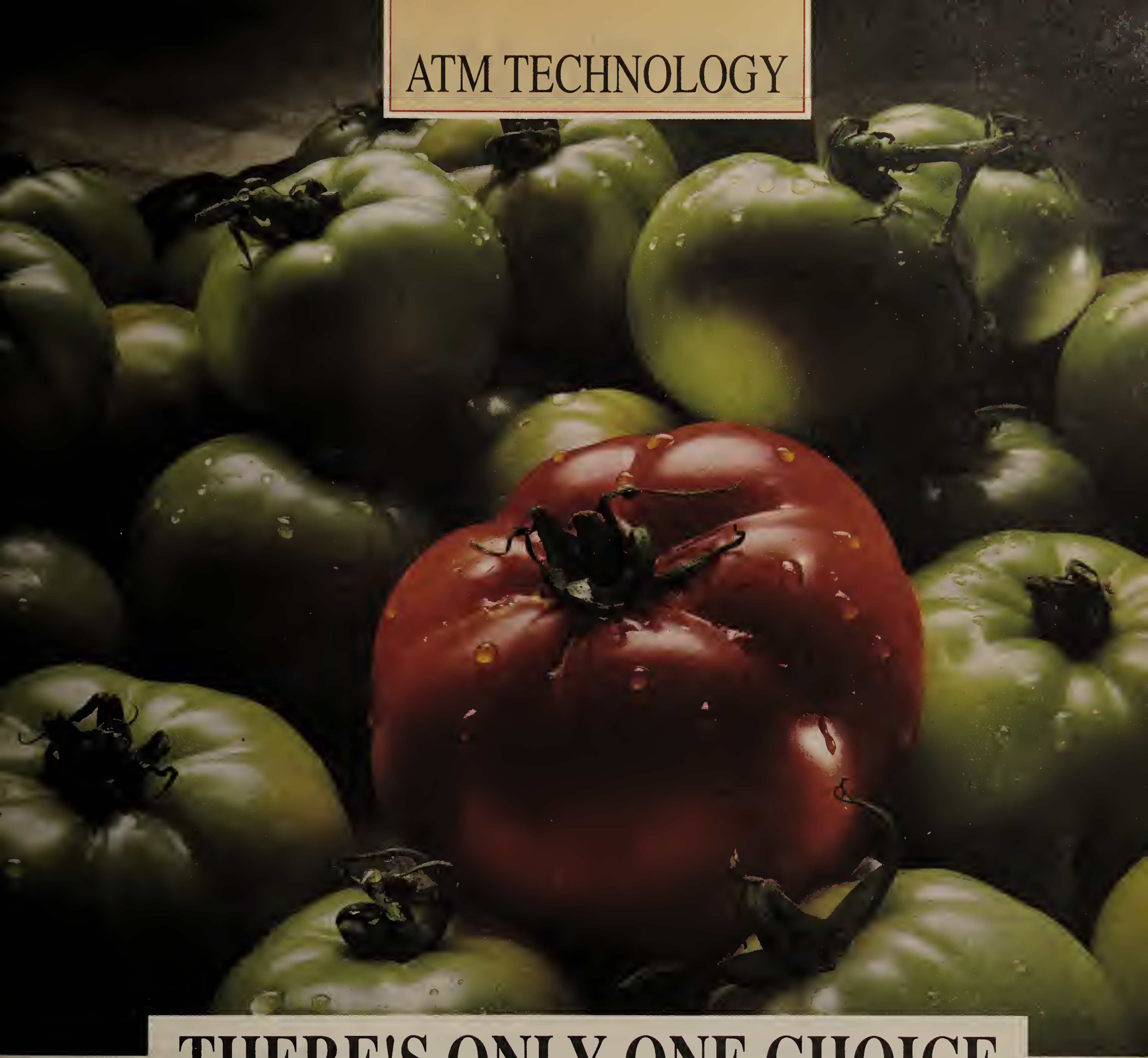

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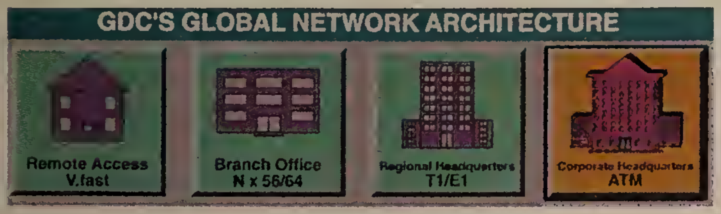

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Circle Reader Service #9

Network World teams with Object World.

NETWORK WORLD

APPN may hold key to SNA/LAN integration

IBM at work on object-oriented work flow management system

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N2

BRIEFS

Competitive access company **MFS Communications Company, Inc.** last week signed a merger agreement with **Centex Telemanagement, Inc.**, a telecommunications management outsourcer with about 11,000 customers.

Meanwhile, MFS operating company MFS Intelenet, Inc. has received authority from the Maryland Public Service Commission to operate as a competitive local telephony company for dial-tone services.

The move, according to the firm, gives MFS Intelenet equal status to Bell Atlantic Corp. for selling services within the state, although MFS Intelenet targets the small and midsize business market.

AT&T has been awarded more than $1 million as compensation for costs incurred in a case brought against the carrier by long-distance telecommunications reseller **Teledesign.** Teledesign had alleged that AT&T violated federal communications law and interfered in the company's relationship with its customers by discriminating among resellers and commercial customers. U.S. District Judge Kenneth Hoyt, however, ruled that Teledesign had failed to prove its allegations.

Sprint Cellular Co. has agreed to sell its licenses to operate the Sioux City, Iowa, cellular market to **McCaw Cellular Communications, Inc.** Terms were not disclosed, and the deal is subject to Federal Communications Commission approval.

Sprint Corp. has certified **RAD Data Communications, Inc.'s** customer premises frame relay/X.25 packet switches as interoperable with the Sprint frame relay service. **Interoperability** between customer gear and public services is important to ensure consistency in signaling and encapsulation schemes. However, quality-of-service standards — such as performance parameters — remain absent from today's fast-packet specifications.

Data services provider **Infonet Services Corp.** said it has established a **global network diagnostics and resolution center** in the Asia-Pacific region. The facility, headquartered in Tokyo, has been integrated with Infonet's diagnostic centers in Belgium and California, which now has trained staffs in all three major time zones.

The Japanese telecommunications administration, Kokusai Denshin Denwa Company, Ltd., has made a multimillion-dollar investment in the project by housing the Infonet diagnostics center in its building, staffing and managing the facility, and purchasing equipment for it, Infonet said.

Two-year-old telephone company **Telstra OTC Australia** said it will invest about $190 million over three years in providing international and domestic telecommunications facilities and services in the **Philippines.** The effort will include provisioning an international gateway, a national transmission network and about 300,000 local exchange lines.

PacBell struggles to bring up ATM apps

BY DAVID ROHDE

San Ramon, Calif.

Pacific Bell's Asynchronous Transfer Mode (ATM) service, commercially available since January, is languishing amid equipment and configuration problems.

Most of the 14 original customers of the service — members of BAGNet — are still awaiting hookup, despite an original goal to be up and running by March (*NW*, Jan. 10, page 9). And the handful that have gained connection report that they are still testing the service, while highly touted applications wait in the wings.

"It's probably been delayed four or five times," said Bill Johnston, group leader of imaging and distributed computing at Lawrence Berkeley Laboratories in Berkeley, Calif. "We've barely gotten the virtual circuits assigned."

Pacific Bell officials concede the delay but blame it on customer confusion about obtaining the proper customer premises equipment. But users counter that the problem is software limitations in the carrier's switches that preclude it from supporting switched virtual circuits (SVC).

Users said they have been forced to configure more than 100 permanent virtual circuits (PVC) in order to establish a fully meshed network among 14 sites.

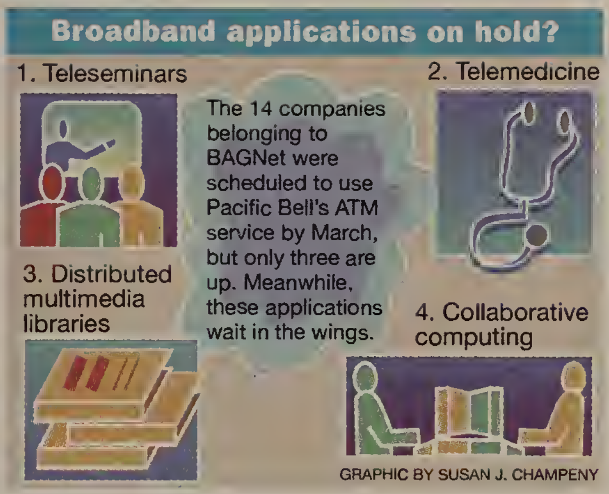
"The architecture of the environment really assumed switched virtual circuits," Johnston said. Workstations at each customer site are supposed to "play the role of routers," he added, mapping Internet Protocol packets into ATM cells so that the traffic is carried in these cells from end-to-end.

"We're using ATM as an IP link-level protocol in the same way that Ethernet is used as a link-level protocol," Johnston said. Configuring the PVCs instead of allowing the traffic to be addressed dynamically via switched connections is an arduous task, he said.

Because of the topology of Pacific Bell's net, obtaining the correct ATM switches has been tricky, Johnston said.

See PacBell, *page 33*

Broadband applications on hold?


1. Teleseminars
2. Telemedicine
3. Distributed multimedia libraries
4. Collaborative computing

The 14 companies belonging to BAGNet were scheduled to use Pacific Bell's ATM service by March, but only three are up. Meanwhile, these applications wait in the wings.

GRAPHIC BY SUSAN J. CHAMPENEY

MCI, Bell Atlantic launch SMDS

BY BILL BURCH

Las Vegas

MCI Communications Corp. last week won its first local exchange carrier (LEC) ally for Switched Multimegabit Data Service (SMDS) with the announcement that it will connect to Bell Atlantic Corp. for commercial service on June 30.

With the launch, MCI becomes the first carrier to connect to a LEC for SMDS. Despite the head start, it will have to work hard to make the service a success since SMDS still lacks key elements, such as LEC support and a net-to-net interface for carrier service management.

In the Bell Atlantic launch, MCI will provide service to nine local access and transport areas: Baltimore; Delaware Valley, Pa.; Harrisburg, Pa.; Newark, N.J.; Norfolk, Va.; Philadelphia; Pittsburgh; Richmond, Va.; and Washington, D.C.

Demand for inter-LATA SMDS carriage is strong, with Bell Atlantic reporting more than half its SMDS customers seeking long-distance connections. MCI plans to widen deployment in the Bell Atlantic region through the end of the year.

MCI had been testing SMDS with Bell Atlantic since January. It has also been working with Pacific Bell and plans to offer service in four California LATAs in June.

Connections to other LECs have not come as quickly. MCI is planning trials with BellSouth Corp. in the second half of the year, but the only other sign of progress is a pending numbering plan agreement with GTE. LEC support is key for SMDS growth, as the carriers currently offer the lowest priced local access and also play a large role in building a market for the service.

USERS GET A CHOICE

But with many LECs dragging their heels, MCI is pressing ahead with two methods to directly connect users. A data exchange interface (DXI) can handle links at 1.544M bit/sec and below, while the carrier's subscriber-to-net interface (SNI) can handle standard token-ring and Ethernet speeds, plus 25M and 34M bit/sec links.

The two access methods have their limitations, however. Users choosing DXI for low-speed SMDS access will have to replace their customer premises equipment should they need to upgrade for higher speed service, according to William Callahan, a product manager with MCI's data product marketing group. As for SNI, that interface is more expensive than access through a LEC and usually can only be justified by the largest customers, he said.

Eventually, user demand will push more LECs to offer SMDS, Callahan said. Until then, MCI believes it can meet a large part of the user demand by going directly to users.

Another challenge MCI faces with SMDS includes lack of a net management interface between carriers. MCI and its LEC partners cannot see past the point where their networks meet. To cope, they have agreed to coordinate network operations so customers only need to talk to one carrier to report SMDS problems, said Callahan, who described the solution as far from elegant. ◼

User tries on low-speed SMDS

SMDS clocked in at a record low speed recently when the Los Angeles County health services department said it would send E-mail and perform file transfers via a 56K bit/sec version of the service.

Using SMDS from GTE Corp. and Pacific Bell, the health department plans to connect area clinics to five hospitals and a computer center. By year end, it hopes to have a series of high-speed links to handle imaging applications such as teleradiology.

The low-speed version should broaden the services' potential applications, which usually run at 1.544M and 45M bit/sec. Pacific Bell has been testing the offering and hopes to begin commercial roll out in the state this year.

With roughly 70 sites to interconnect, SMDS offered the advantage of faster data transmission than dial-up connections. When compared to frame relay, SMDS promised a way to connect sites without the expense of configuring permanent virtual circuits for such a large number of sites, said Herbert Woo, the department's chief of technology services.

Another strong point was the high transport speed the service can handle, he added. As Pacific Bell boosts its backbone speed with the installation of a broadband net, SMDS' top speed will rise to 155M bit/sec and higher.

Long term, the department will need high-speed WAN facilities to support the imaging it is just now trying to bring up on its local nets. "The imaging application probably won't be in place until the end of the year," Woo said. "That gives us time to look at where we have to deploy the imaging stations and how to design the local area and how to feed it into the wide area."

BY BILL BURCH

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Processor Activity
1
Low
High
2
Low
High
3
4
The new AS/400 Advanced Series from IBM

Frame relay assumes role of network ‘glue’ for mgmt. firm

BY JOANIE WEXLER

Dallas

In an era when frame relay's reputation as a less expensive, higher speed alternative to private lines is fueling most installations, a hospital management firm has found a different motivation: collapsing multiple networks into one environment that doesn't discriminate among protocols.

The frame relay decision came when American Medical International, Inc. (AMI), a nationwide company that provides management services to 38 hospitals, was faced with having to add a third TCP/IP-based network to its existing Systems Network Architecture and Data General Corp. X.25-based Xodiac nets.

TCP/IP is a must in today's client/server arena, in which firms such as AMI are reaping savings by developing applications for smaller computing platforms instead of mainframes.

AMI, which outsources its wide-area data communications to Perot Systems, Inc., charged Perot with the task of finding a way to integrate support for Unix applications without having to add a Transmission Control Protocol/Internet Protocol backbone to support them, said Alan Cranford, manager of systems operations at AMI here.

Perot last fall recommended that AMI implement an AT&T InterSpan frame relay net.

"Our main motivation was to be able to consolidate networks onto one protocol-independent WAN," Cranford said. "This is how we are eliminating barriers to implementing new technologies and applications."

Now, for example, Cranford's information systems/telecommunications group can more easily handle requests to use Novell, Inc.'s Internetwork Packet Exchange (IPX) protocol for electronic mail and remote local net communications. "We can accommodate these requests without the net being the barrier," he said.

The reason: Routers — which sport protocol prioritization schemes — plus the "virtual" nature of frame relay, allow users to support various protocols and their associated timing quirks over one access link into the frame relay cloud. From there, the carrier sets up permanent virtual circuits (PVC) between sites for each traffic type.

AMI began bringing the hospitals onto the net in March. It has contracted for 56K/64K bit/sec PVCs out to each hospital and port speeds of 128K bit/sec. Users can burst above their PVC speeds up to a maximum of their port speeds if there is spare capacity on the network, getting extra bandwidth for free.

"Users notice little, if any, performance difference," Cranford said. "Ultimately, the difference they see will be in the area of new applications that would not have been available otherwise."

For example, he said, AMI recently introduced a managed care administrative system that runs on central Hewlett-Packard Co. Unix processors and allows health care providers to verify subscriber membership, schedule services and allocate insurance premiums across various providers on the network. The application, with TCP/IP hooks, could not have communicated over the old AMI net.

Cranford said that so far, he is actually paying a bit more for his frame relay net than his SNA/Xodiac private-line network. Where the savings will come in will be when additional overlay networks need to be built, he said.

PacBell

Continued from page 30

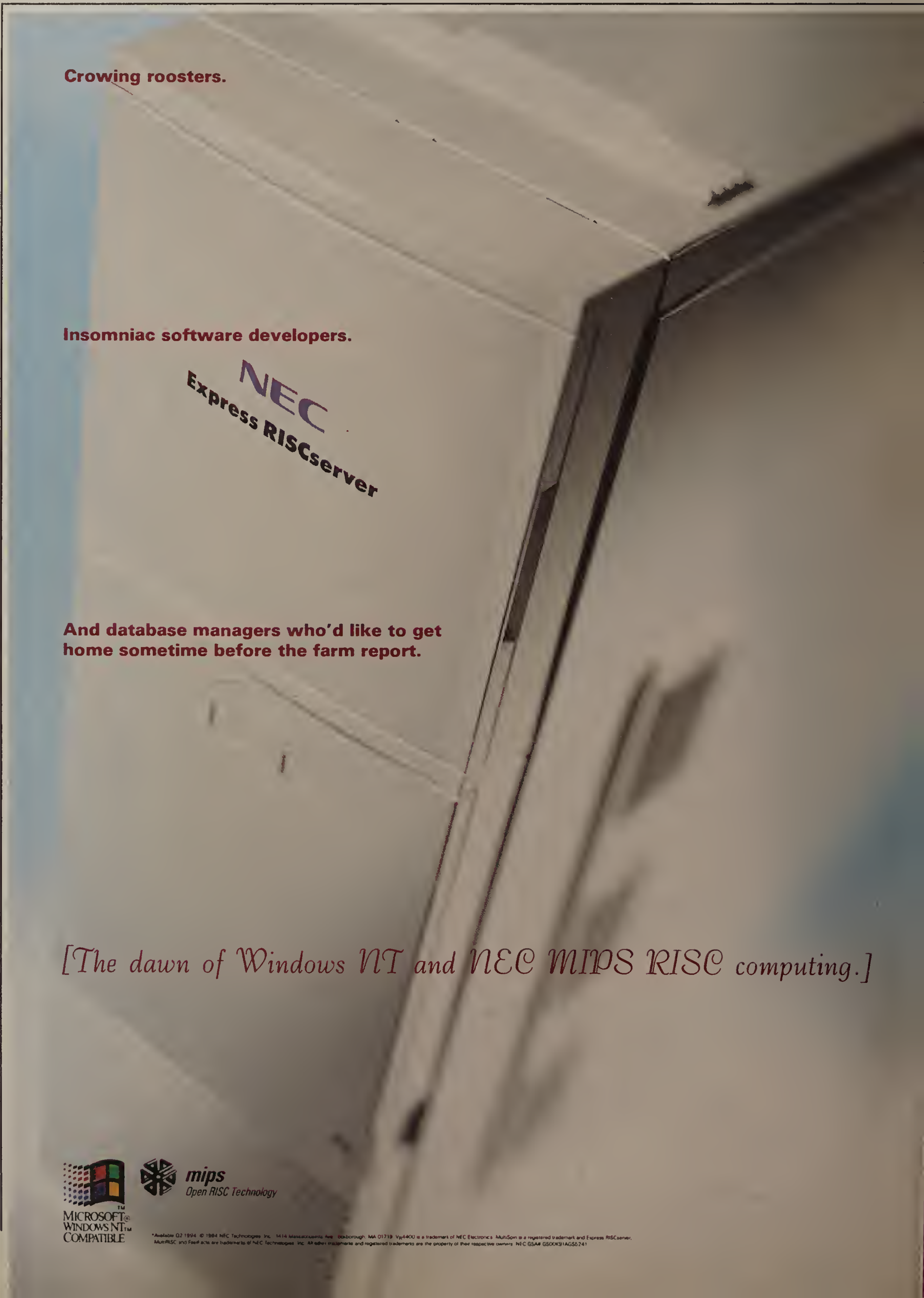
The carrier runs a Synchronous Optical Network (SONET) ring between its two ATM backbone switches in Oakland and Palo Alto, Calif. Typically, users then have to drive single-mode fiber 5 to 15 km to one or the other.

The only ATM switch manufacturer that was able provide a single-mode interface was Pittsburgh-based FORE Systems, Inc.

Now the BAGNet members are sending test messages among one another. "There are a few sites up, and we're just starting to ping each other," said Dan Swinehart, principal scientist with the Xerox Palo Alto Research Center.

Although Pacific Bell's commercial launch featured the first firm ATM service pricing among local exchange carriers — $4,850 per month for 45M bit/sec service and $7,899 for 155M bit/sec service — none of the BAGNet customers are paying those prices. Instead, their use of the ATM service is subsidized by a trust funded by Pacific Bell, which other potential ATM users are starting to tap, as well.

One customer outside the BAGNet coalition, Hughes Aircraft Co. in El Segundo, Calif., has purchased ATM service at the stated prices, Verger said. Hughes is planning to build a wide-area ATM pilot network (*NW*, March 15, 1993, page 1).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Bell Atlantic slates major ISDN push in gov't

BY DAVID ROHDE

Silver Spring, Md.

Bell Atlantic Corp. is accelerating the push of its Integrated Services Digital Network offering to federal government agencies in the Washington, D.C. area, particularly the military.

The regional Bell holding company hopes to install ISDN lines at the rate of 2,300 stations a month in the Department of Defense, said Anthony D'Agata, vice president-military for Bell Atlantic Network Services, Inc.

"The military has believed in ISDN for some time, and, economically, it makes sense," D'Agata said in an interview at Bell Atlantic's federal systems headquarters here.

To maximize efficiency for voice applications, Bell Atlantic is encouraging government use of multipoint ISDN, where the two 64K bit/sec B channels on a Basic Rate Interface (BRI) are split among two users, and the 16K bit/sec D channel is shared.

But the government wants to use the two B channels together to conduct videoconferences and to facilitate LAN-to-LAN and remote local network access, according to Bell Atlantic officials.

Even Defense Secretary William Perry and 15 other top Pentagon officials soon will be able to access electronic mail and other applications from home over ISDN lines, D'Agata said.

"Clearly, this is the largest ISDN user community in the world," said Warren Suss, president of Warren H. Suss Associates, a government technology consulting firm in Jenkintown, Pa.

ISDN IN PLACE OF LAN

In at least one case, the military actually is using ISDN lines in place of a single campus-wide LAN.

The Army Department's personnel group has installed 1,000 ISDN lines for PC-to-mainframe applications, even though the mainframe is located in the same building complex as the personal computers, said Russ Green, chief of information operations for Army personnel.

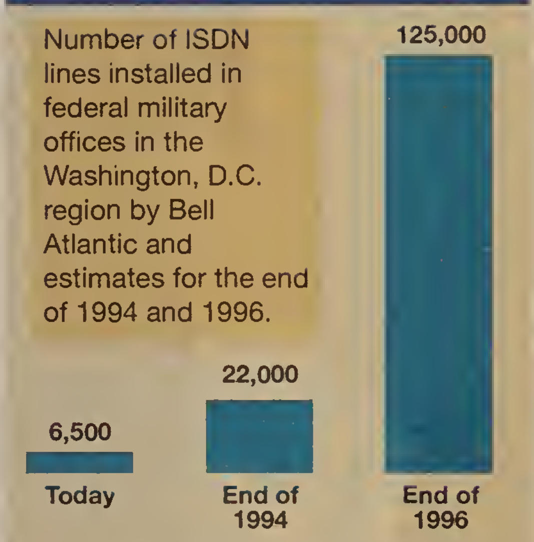
Data is transported out to a Bell Atlantic central office through BRIs and back to the mainframe through Primary Rate Interfaces (PRI), he explained.

"One of our problems is that we lease a commercial building," Green said.

"We can't necessarily put power where we want, or servers where we want, or hubs where we want. But we can put telephones wherever we want," he added.

The ISDN lines replaced data-over-voice analog lines transporting data at 9.6K bit/sec.

Get me Washington on the B channel



SOURCE: FEDERAL SYSTEMS DIVISION, BELL ATLANTIC, SILVER SPRING, MD.
GRAPHIC BY SUSAN J. CHAMPENEY

Although the required ISDN equipment adds to the cost, the line cost is about the same and users can transport images with the additional bandwidth, Green said.

Despite the physical difficulties, the complex may eventually be wired with a 10Base-T Ethernet, he said.

But even then the ISDN deployment will continue. The complex is expected to have 4,000 BRIs by October 1995, including many for voice-only applications.

CIVILIAN AGENCIES

Bell Atlantic also is installing 100 to 200 ISDN lines a week to federal civilian agencies in the Washington, D.C. area, according to Ray Ghion, vice president-civilian for the Federal Systems Division.

Under Bell Atlantic's Washington Interagency Telecommunications System (WITS) contract, it has established four ISDN-capable central offices in the Washington area exclusively for civilian government customers in 100 buildings, Ghion said.

"It's like one big ISDN island," he said.

The carrier is pushing ISDN in its contracts with other civilian agency contracts that are not part of WITS.

For example, it has installed 55 PRIs for the White House and the adjacent Executive Office Building.

So that database managers could get home from work at a reasonable hour, the developers of Windows NT™ watched many sunrises from behind their MIPS® RISC computers.

(They chose machines built around the MIPS RISC architecture for two basic reasons: sheer performance and superior technology. Fact is, the NEC V$_R$4400™ MIPS processor is at the heart of some of the most powerful computers in the world.)

Was it all worthwhile? Absolutely. First, Windows NT lets companies move their information management into the future without missing a beat. Or shutting down their mainframes.

Second, the brilliant new database management application made possible by Windows NT–Microsoft SQL Server–makes managing databases simpler. And gets enterprise information to end users easily and fast.

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SQLSERVER

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NEC

[illegible]

Circle Reader Service #14

RATE & TARIFF MONITOR

by Eric Paulak

SONET is here and there, but not everywhere

If you need to send a lot of data — I mean *a lot* of data — between two sites, AT&T has introduced its Accunet T155 service, the first commercially available Synchronous Optical Network (SONET) service from a long-distance carrier. The new service gives you the equivalent of three and one-third T-3s and costs about 10% to 15% less.

The problem is that AT&T is the only long-distance carrier that has tariffed a high-capacity SONET service, and it has only done so for eight city-pairs.

MCI and Sprint are also incorporating SONET technology, but they won't be fully in place until year end. Some local exchange carriers (LEC) offer SONET access services, but in most areas you have to use multiple T-3s for access.

A little background: SONET is a fiber optic-based service that provides transmission speeds of 51.84M to 13.22G bit/sec. It will form the backbone network needed for services like Asynchronous Transfer Mode, Switched Multimegabit Data Services and frame relay, and should eventually replace the standard T-1/T-3 network in the U.S.

With AT&T's new T155 service, a circuit between Colorado Springs and Salt Lake City costs $117,556. Three and one-third T-3s would cost $126,392. That equals the 10% to 15% savings that AT&T promised when they first announced the service in December.

The other city-pairs where AT&T's Accunet T155 service is now available are: Albuquerque, N.M., to Hayward, Calif.; Bloomington, Ill., to Oakbrook, Ill.; Chicago to Rochelle Park, N.J.; Cheyenne, Wyo., to Colorado Springs; Cleveland to Plymouth, Mich.; New York to Portland, Ore.; and Raleigh, N.C., to Wilmington, N.C.

In addition to the cost savings, SONET also offers four key advantages over traditional T-1/T-3s.

First, you get 20 extra megabits of bandwidth, which you can use to test your line or run maintenance without taking the circuit out of service. With a T-1 or T-3, the whole line has to come down.

Plus, you can pull out single or multiple channels to any point along the route, a procedure commonly referred to as drop and insert.

You also get a standard transmission speed that the European and Asian markets use. That means no more trying to match T-1s and E-1s.

Even though AT&T only filed for SONET service in eight city-pairs, it plans to have SONET services available in more than 160 cities. It has already filed tariffs to allow for access in those cities and is just waiting for a customer to ask for the service. When that happens, it will add the new city-pair price to the tariff and make it available to anyone.

The first city-pairs AT&T filed show that those users now taking advantage of SONET are most likely the military and large manufacturers, like one of the Detroit auto makers — both of which have very high-speed data needs.

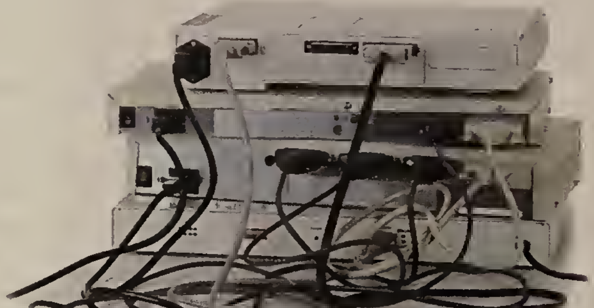
Sprint says it can also make point-to-point SONET available on an individual basis, but it hasn't filed tariffs for it.

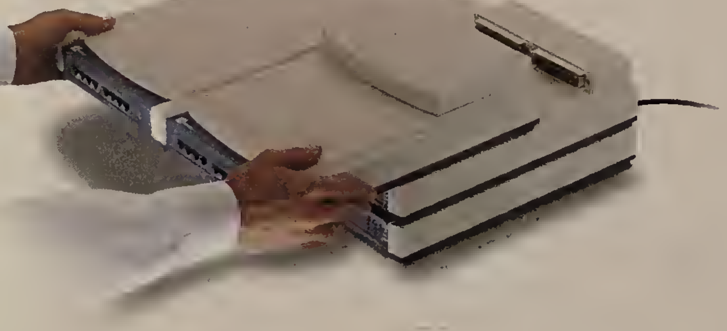
On the local level, the competitive access providers were the first to offer SONET service. Teleport Communications Group offers SONET services in Boston, Chicago, Dallas, Houston, New York and Omaha, Neb. Metropolitan Fiber Systems has SONET in Albany, Buffalo and Rochester, N.Y., Atlanta and Northern New Jersey.

All of the Bell companies currently have some type of SONET service, but for the most part, they're still in the testing phase. Look for more complete implementation some time next year.

Until then, if you want SONET service, you'll have to use multiple T-3s — but that's only if they have them. As with most services, the LECs are lagging behind in product development.

➺ Paulak is associate publisher for the Center for Communications Management Information in Rockville, Md., a provider of rate and tariff information. He can be reached at (301) 816-8950, Ext. 327.





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Circle Reader Service #11

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Circle Reader Service #7

BRIEFS

BrainTree Technology, Inc. of Norwell, Mass., has announced software for identifying potential **security problems** in client/server database systems. SQL-Secure Database Password Manager is a collection of applications that includes a server-based verification and password-change verifier, as well as a password checker that monitors passwords for those that might be guessed by a password-cracking program. A client application lets users change their own passwords after they are checked for vulnerable words.

SQL-Secure runs on Unix and Digital Equipment Corp. OpenVMS servers, and supports Windows and Unix clients. Pricing starts at $7,500.

BrainTree: (617) 982-0200.

Fujitsu Networks Industry, Inc. of Stamford, Conn., recently announced an upgrade and about a 50% price cut for its DeskTop Conferencing **groupware** software. The software lets Windows users share data and graphics across Novell, Inc. NetWare networks in real time. Version 1.5 offers faster screen refresh rates for desktop applications such as word processing and spreadsheet programs, as well as a new tool for keeping track of the number of conferences held over a network.

Pricing starts at $1,290 for a 10-user license, compared to the former price of $2,490.

Fujitsu: (203) 326-2700.

Innosoft International, Inc. of West Covina, Calif., last week announced an **X.500 directory server.** The company's PMDF-X500 directory service agent is based on the Quipu implementation of X.500 and provides a variety of services, including address translation for connecting proprietary electronic mail systems. It connects to clients via Transmission Control Protocol/Internet Protocol. It operates under Digital Equipment Corp.'s OpenVMS on both VAX and Alpha platforms.

Shipping is scheduled for June. No price has been announced.

Innosoft: (800) 552-5444.

Trinzic Corp. of Palo Alto, Calif., recently announced plans for a graphical user interface for its **client/server application development** system. Aion Development System 6.4 for Windows and OS/2 will let developers build applications that can talk to back-end database systems via Microsoft Corp.'s Open Database Connectivity specifications and drivers for specific relational databases. These applications can also be integrated with applications designed with other Trinzic tools for Sun Microsystems, Inc. SunOS and IBM MVS and AIX platforms.

The Windows and OS/2 tools are set to ship in June starting at $9,000.

Trinzic: (415) 328-9595.

AboutSoftware, Inc. last week announced **middleware and data access software** designed to connect Windows and Apple Computer, Inc. Macintosh clients to back-end databases. The company's 5PM line includes interface builders, terminal emulators and database drivers.

About Software: (408) 725-4242.

Insurance firm creates imaging policy

Norfolk & Dedham shelves antiquated paper moving system.

BY KEVIN FOGARTY

Dedham, Mass.

On the surface, the solution to Leon Hebert's dilemma seemed like a no-brainer: Replace a 1950s-era motorized shelving system at the insurance company he worked for with a newfangled imaging and work flow system.

But to Hebert, vice president of information systems (IS) and services for Norfolk & Dedham Mutual Fire Insurance Co. here, the 1991 decision wasn't so easy. The motorized system already housed the 1.5 million documents generated annually by the firm, and it would take years and millions of dollars to build the imaging and work flow system.

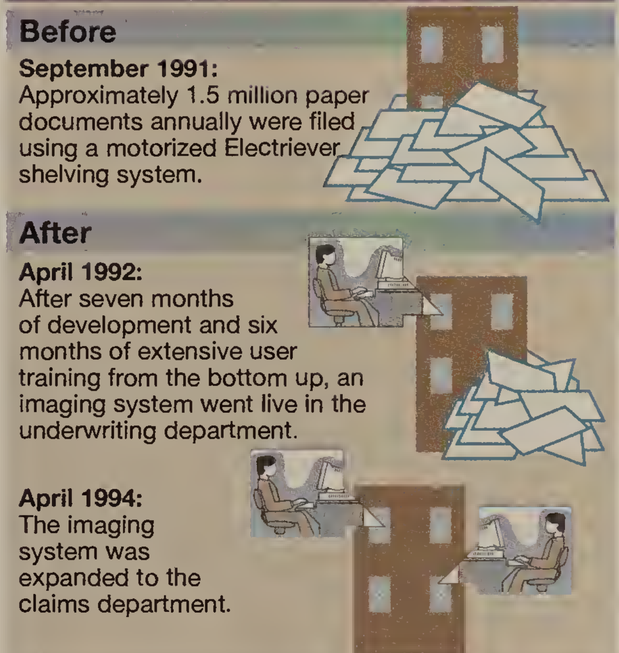
In the end, Hebert pushed for a major reengineering effort, and he's glad he did. The resulting $1.5 million-to-$2 million imaging and work flow system now saves the $100 million insurance company close to $1 million per year by letting knowledge workers access documents immediately by computer, rather than through a large clerical staff that often took days to locate and return files.

RESCUE FROM DISASTER

Hebert also gives the new system much of the credit for pulling the company back from disaster after damage claims resulting from Hurricane Andrew in 1992 almost swamped the company.

The new system, which cuts delays in issuing insurance policies and payoffs for claims by letting staffers work on electronic files that include photographs and scanned-in documents, replaced 17 20-year-old Electriever motorized shelving machines. The machines added to the amount of storage space by rotating a ceiling-level stack of shelves to working level. But it sometimes took a clerical staff days to retrieve and deliver office mail files requested by office workers, Hebert said.

Starting from scratch at Norfolk & Dedham



Before

September 1991:
Approximately 1.5 million paper documents annually were filed using a motorized Electriever shelving system.

After

April 1992:
After seven months of development and six months of extensive user training from the bottom up, an imaging system went live in the underwriting department.

April 1994:
The imaging system was expanded to the claims department.

GRAPHIC BY TERRI MITCHELL

The company hired Wang Laboratories, Inc. as the prime contractor on the reengineering project, which involved the implementation of a Wang Integrated Imaging System and a Wang VS 6000 minicomputer-based Epic/work flow imaging system from Computron Technologies Corp. in Rutherford, N.J.

EASY ACCESS

The imaging software runs across a Novell, Inc. NetWare network serving Intel Corp. 80386-based clients using Windows.

Wang wired the building and put together all of the pieces except the work flow application, which was supplied and customized by Computron.

"Now, a paper document, when it comes to us in the mail or whatever, never leaves the mailroom," Hebert said.

A mailroom staff of 12 now scans incoming documents into the imaging system, which makes the documents available to employees via their desktop computers over the NetWare local-area net.

It took seven months to wire the compa-

See Norfolk, *page 39*

DISTRIBUTED COMPUTING

Object group evaluating new ORB specification

BY ADAM GAFFIN

Framingham, Mass.

The next major revision of the Object Management Group's (OMG) distributed computing specifications will focus on interoperability between different vendors' implementations of the specs, OMG officials said last week.

The group, based here, is currently evaluating proposals for the second version of its Common Object Request Broker Architecture (CORBA), which defines how objects and object-oriented programs interact across a heterogeneous network.

At the heart of the specifications are ORBs, which act as a sort of air traffic controller for routing data between distributed objects and applications.

CORBA 2.0 will add standards for interoperability, including a common object naming scheme, so that one vendor's ORB can talk to another's over a variety of network transports. CORBA 2.0 will be backward-compatible with CORBA 1.1, the current version of the specification.

OMG President Chris Stone said the basic Interface Definition Language through which ORBs are addressed by applications would not be changed in CORBA 2.0. So applications written to CORBA 1.1 will work with CORBA 2.0 systems, he added.

INTEROPERABILITY WOES

Stone and John Slitz, the group's vice president for marketing, said interoperability has become a source of growing concern and confusion among end users and developers. A growing number of vendors offer "CORBA-compliant" software, but that does not mean that two vendors' ORBs will actually work with each other, they said.

This problem should go away with the adoption of CORBA 2.0, scheduled for release late this year.

The group's ultimate goal is to cre-

See Object, *page 39*

When art and technology meet

The play's the thing, objectively speaking.

In July, San Francisco theater group Modus Ensemble will put on the premiere of *An Object Orientation,* a play that portrays a search for meaning in a technological age.

The play is written and directed by Timothy O'Brien, a former *Network World* bureau chief, now an analyst with the Patricia Seybold Office Computing Group in Boston. It has the backing of the Object Management Group in Framingham, Mass., as well as Stanford University. O'Brien said the play is sort of an update of *Waiting for Godot* for the computer age. Two characters from a structured world, If and Loop, seek the help of object characters in their search for a bit of lost data.

The play opens at the same time as the ObjectWorld '94 conference in San Francisco.

The play runs July 26 through Aug. 7 at the Cowell Theater, Pier 2, Fort Mason Center. Tickets cost $20 and can be obtained by calling (415) 346-6456.

BY ADAM GAFFIN

DATABASE CONNECTIVITY

Computer Concepts, IBI release database access software

BY ADAM GAFFIN AND MARTIN LAMONICA

Computer Concepts Corp. of Bohemia, N.Y., today will announce a new version of its SQL database query tool for end users.

Meanwhile, Information Builders, Inc. (IBI) of New York has announced a Windows-based report-generating and database-querying package for end users and application developers. Computer Concepts said its d.b.Express software lets end users perform multidimensional analysis of data by selecting items from a bar chart view of data stored in an SQL database.

Company officials said this makes queries easier than is possible with other graphical query tools, which require users to make a series of selections from lists. There are few chances to make errors with d.b.Express, they said.

Business graphics are dynamically linked to the underlying "selector objects," which means users no longer have to manually rebuild charts or graphs at the start of each query session, the company said. The software also comes with a series of tools for generating reports.

New database access tools

Vendor Product	Price	Availability
Computer Concepts d.b.Express	Starts at $395	Now
IBI Focus Reporter for Windows 1.0	$395 per end-user copy; $3,395 per corporate developers' kit	Now

The company's d.b.Express for Windows, the Office edition, lets users query a variety of relational databases with drivers and complies with Microsoft Corp.'s Open Database Connectivity (ODBC) specification.

A CLEAR FOCUS

IBI's new data access tool, Focus Reporter for Windows 1.0, lets users construct database queries by dragging and dropping objects, such as fields, across a screen. By pointing and clicking, users alter query parameters and shift columns and rows for different views.

Users can also click on a generated report and spruce up presentations with different fonts, colors and graphical representations. Focus Reporter can access Btrieve, Focus and Borland International, Inc. dBase databases. It is delivered with an ODBC driver, as well as interfaces to databases from IBM, Microsoft, Oracle Corp., Sybase, Inc. and Teradata Corp. The product also works with IBI's Enterprise Data Access/SQL querying software for accessing a variety of other databases.

FOCUS REPORTER'S ABILITIES

The next version of the product – due in a few months – will include support for Microsoft's Object Linking and Embedding 2.0-compliant applications and Lotus Development Corp.'s Notes databases, said Dave Feldstein, vice president of IBI's microproducts division.

The product currently supports Microsoft's Dynamic Data Exchange technology.

Focus Reporter's ability to access several data types to generate a single report is the product's greatest advantage to federal mortgage lender Federal National Mortgage Association (Fannie Mae), said Steve Lasher, senior systems analyst at Fannie Mae's Atlanta region information systems (IS) department.

Another user, British Gas, Plc., plans to roll out Focus Reporter to 2,500 of its 24,000 end users to allow them to "point and click and have [corporate] data immediately," said Roxane Harker, the firm's office systems director. With the company's IS staff required to generate user-requested reports, often "the data was no longer relevant," she said.

©Computer Concepts: (516) 244-7700; IBI: (212) 736-4433.

LaMonica is a U.S. correspondent for IDG News Service.

Blyth outlines development tool strategy

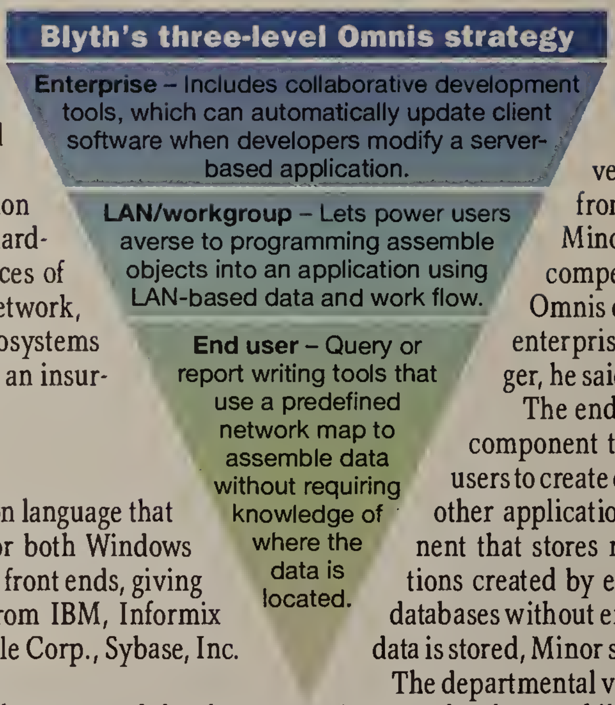
Will add end user and workgroup application tools for three-tier plan.

BY KEVIN FOGARTY

Foster City, Calif.

Blyth Software, Inc. will release later this year a set of client/server application development tools for departmental programmers and end users.

The products complement Blyth's flagship product, Omnis 7.2, which is designed for developers of enterprise-level client/server applications, according to Michael Minor, president and chief executive officer of Blyth. The product set will give users the ability to build compatible applications at three levels of sophistication: enterprise, workgroup and end user.


Blyth's three-level Omnis strategy
Enterprise – Includes collaborative development tools, which can automatically update client software when developers modify a server-based application.
LAN/workgroup – Lets power users averse to programming assemble objects into an application using LAN-based data and work flow.
End user – Query or report writing tools that use a predefined network map to assemble data without requiring knowledge of where the data is located.

The approach makes application development easier because it standardizes the language as well as the sources of change and support throughout the network, said Gerald Nach, manager for microsystems development for Rollins Hudig Hall, an insurance brokerage in Chicago.

OMNIS' LANGUAGE

Omnis 7.2 uses a fourth-generation language that lets developers build applications for both Windows and Apple Computer, Inc. Macintosh front ends, giving them access via SQL to databases from IBM, Informix Software, Inc., Microsoft Corp., Oracle Corp., Sybase, Inc. and others.

It provides version control to help groups of developers work together and contains a change management system that will automatically update the client versions of an application when a programming change is made at the server. It also supports Microsoft's Open Database Connectivity specification.

The company's new tools for workgroup-based database administrators and local-area network administrators will enable development of scheduling, low-level work flow and LAN-based databases applications.

The products will let "power users who are occasional programmers" select objects from Omnis' tool set to assemble departmental applications, Minor said. Developers will not be forced to do much programming with these tools, he said.

THE BLYTH ADVANTAGE

This software will be positioned versus client/server development tools from Powersoft Corp. and Gupta Corp., Minor said. Blyth's advantage against the competition is in its ability to integrate with Omnis development tools at the end-user and enterprise levels, as well as its built-in debugger, he said.

The end-user product line consists of a client component that provides a graphical tool for end users to create query applications, report writers and other applications as well as a server-based component that stores network and resource data. Applications created by end users can access distributed SQL databases without end users having to know how or where data is stored, Minor said.

The departmental version of Omnis will cost from $400 to $800 per developer, while the end-user version will cost $169 to $400 per copy. Blyth's existing Omnis 7.2 offering lists for $3,750.

©Blyth: (415) 571-0222.

Object

Continued from page 38

ate a series of common operating system-like services, such as security and directories, as well as specifications for common applications, such as spell checking and document architecture.

Moving objects

1989	OMG founded.
1990	Object Management Architecture guide published.
1992	Formal ORB specifications released.
Mid-1993	RFP for object services published.
Late 1994	ORB interoperability specifications will be released.

The group expects to issue a request for information in June to firms or other industry groups building compound document specifications. Stone predicted that among the possible contenders would be Microsoft Corp.'s Object Linking and Embedding, the OpenDoc architecture being built by a group of Microsoft rivals and the Standardized Graphics Markup Language.

Stone and Slitz predicted that most of these services and capabilities would be in place within four or five years.

The new specification will let a new breed of companies launch "killer" applications that will seriously dent the market share of existing application vendors such as Microsoft and Lotus Development Corp.

Companies such as Microsoft and Lotus will prove to be wedded to their existing proprietary applications for developing the next generation of object-oriented networked applications, they added.

Norfolk

Continued from page 38

ny's building for a LAN and bring the imaging system on-line, and another two months to put 112 computer novices at the company through basic computer training.

To minimize the employees' resistance to change, Hebert put together an IS-led implementation team that included people from the departments that would be using the system to serve as expert advisors.

"We made the end-user department feel like this was their system," Hebert said. "We're not telling them how to do their business; they're telling us how they want to do their business, and we'll build the system accordingly."

Hebert said he rode both Wang and Computron hard to get the system he needed. Adding power and tuning the network dropped the time it takes to call an image from the server to the desktop from 30 seconds as Wang initially proposed to six in practice. Hebert is pushing for a two-second response. He also kept a Computron technician on-site for five months to tweak the work flow system to meet Norfolk & Dedham's needs.

The first group to go on-line with the system was Norfolk & Dedham's underwriting department, which approves insurance applications. Most insurance firms automate their claims department's first, to let claims adjusters view damage photos and claims forms on-line, and cut response times, Hebert said.

Automating underwriters, however, meant that the company could approve new business in three or four days, rather than several weeks.

The system improved productivity 15% to 20%, and would have helped Norfolk & Dedham to add 30% to 40% in new business without adding staff had it not been for Hurricane Andrew. Huge payouts to victims of the hurricane forced the company to lay off workers for the first time in its history. It also stopped issuing policies in the South, almost halving the number of its 180,000 policyholders, Hebert said.

"If we had not been highly automated, I'm not sure we could have stayed in business," Hebert said. "Hurricane Andrew did an awful job on us."

> **"We're not telling them how to do their business; they're telling us how they want to do their business, and we'll build the system accordingly."**

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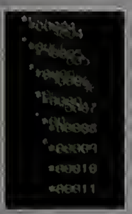

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FAST PACKET SERVICES

Editorial

Network management vendors are getting a report card from their customers in this week's issue, and the grades aren't great.

The more than 200 readers surveyed by *Network World* and Boulder, Colo.-based Contributing Editor John McConnell, president of McConnell Consulting, Inc., gave vendors a lukewarm overall rating and less than satisfactory scores for oft-touted, but rarely delivered functions such as data repositories and automated problem response.

We like to toss around the phrase "enterprise managers," but it's pretty clear that users don't view the products in that light. The average number of elements being managed is depressingly low, indicating that customers don't have enough confidence in the products, or the platforms don't deliver what's really needed to control the enterprise.

A vendor's response might be: "Hey, these things take time."

No doubt. But these issues aren't new. Users have been asking for common data repositories for years, and vendors have been promising to deliver. To date, there's been precious little progress made.

And the promise of future enhancements holds little consolation to network professionals who see management responsibilities increasing exponentially while their budgets ratchet up a few percentage points or so each year. With the onset of collaborative computing, users are slipping even further behind. They're having a hard time dealing with the expanding network infrastructure, let alone the distributed applications being deployed atop it.

With this survey, we've tried to establish a hierarchy of user needs — a list of action items for vendors. The ones who address them most rapidly will be the most profitable; it's as simple as that.

One key to meeting user needs more quickly is to take advantage of work already undertaken. For example, vendors should be moving with alacrity to support the Desktop Management Task Force's (DMTF) recommendations. And, where it makes sense, vendors should band together to solve problems. The Management Integration Consortium (MIC) is a good example of this idea in action. Contact DMTF at (503) 696-9300 and MIC at (800) 945-4454.

Customers need to push harder, as well. Get involved with your vendor's requirements council or work with DMTF, MIC or a user group. We'll be following vendor responses to these issues and will be releasing a progress report on these survey issues this fall. In the meantime, let us know your concerns or your reaction to the survey.

JOHN GALLANT jgallant@world.std.com

TELETOONS

FRANK AND TROISE

Frankly, you Internet Gophers look a lot better on a computer screen than in real life...

REALITY CHECK

by Thomas Nolle

OSI decline reflects problems in standards process

With the demise of the Government Open Systems Interconnetion Profile (GOSIP) (March 21, page 1), OSI may become yet another casualty of standards makers' insistence on imposing standards on the marketplace, rather than letting the marketplace dictate the standards needed. As a result of this philosophy, time and energy is being wasted as users try to apply technologies that weren't necessarily designed to solve their problems.

Twenty years ago, happy vendors pushed and shoved to get their proprietary solutions to the marketplace first. Standards? We didn't even know who wrote them then.

Today, formal bodies like ANSI or the CCITT (pardon me, it's now the International Telecommunication Union) can't churn standards out fast enough for us — we invent trade groups like the Frame Relay Forum or the ATM Forum to help. But standards aren't always a good thing, heretical as it may sound. In fact, they can be downright bad.

The telecommunications industry is a competitive market. In this kind of environment, vendors typically look for unexploited opportunities and present products or services that could be used to exploit them. Buyers review the options the vendors present them, then pick the ones that offer a good balance of cost and capability. This selection makes winners out of some early offerings and losers out of others.

The losers quickly get the message and home in on the concepts that users find appealing. Products cluster in a smaller area, giving users a more refined set of choices. Eventually, just the right combination is found, and every vendor slavishly builds products around it. Hey, it's the American way. Or it was.

Around the time that we decided that big market successes were inherently anticompetitive (when we broke up the Bell system), we discovered the concept of standards. The idea was to give the marketplace a standard, and everybody would go along with it right from the start, eliminating all that wasteful market posturing by vendors. Everything would work together seamlessly, like machine screws and nuts, because everything would be built to meet the same specification. Thus was born the open systems movement, and the OSI model (first published in 1977) was elevated almost to the status of a religious writing.

Where is OSI today? In 1985, nearly 90% of corporations expected to be OSI-compatible within five years. In 1994, the amount of data traffic using OSI standard protocols wouldn't tax the infrastructure of a Third World country.

The promise of OSI, the first of the really popular standards, seems unfulfilled, yet those forums keep chugging along, generating more standards. What's wrong here? Was OSI, as some say, simply badly done or is there a more fundamental problem? We may find the answer in the standards now being considered and their value to the market.

For example, consider frame relay switched virtual circuits (SVC). In January, the Frame Relay Forum ratified an SVC agreement that frame relay vendors and carriers can now implement. Never mind that most frame relay carriers aren't all that interested in SVCs because they force the carrier to deploy more net capacity. Never mind that most users employ frame relay in LAN internetworks and that higher-level questions like how to consume switched trunking services in today's router protocols haven't been settled. If we figure out how to deploy and use SVCs, we'll have a standard ready and waiting.

Another example of putting the standards cart before the horse involves Asynchronous Transfer Mode (ATM) local-area nets. The ATM Forum has rejected IBM's plea for lower-speed premises access to ATM. Apparently, 25M bit/sec just doesn't capture the spirit of broadband ATM — everybody wants to push for even higher speeds, like 622M bit/sec. Never mind that you can't terminate 622M bit/sec channels on IBM PC AT buses and that 72% of LAN clients are PC AT compatible. Never mind that the fastest *local* device on most PCs is running at just about 25M bit/sec. Never mind that the cost of a 25M bit/sec ATM attachment is pretty obviously going to be lower than that of a 622M bit/sec attachment. Things like cost can't be allowed to impinge on the purity of the standards process.

Who are these people writing standards anyway? Honest, hardworking people, to be sure, but largely they are vendor-paid technologists — not business people. In the main, they are focused on a single market area, not mindful of the broader questions of how their particular technology will fit in the big equation of product and service justification and consumption. They gave us OSI. They gave us Integrated Services Digital Networks. In short, standards are being created by a special class of people, ones who don't have any conspicuous record of anticipating market needs.

Unfortunately, the impact of these standards isn't just to provide a little diversion on the way to a correct, market-driven solution. What might the direction of data net evolution be today if the OSI craze had not developed? Would we have formulated something else, something more useful? Could ISDN have been successful if we had understood more about the applications it was designed to support before we made it into a standard and foreclosed debate and innovation?

Once a standard develops today, it becomes nearly impossible not to adhere to it — supporting standards is the technology equivalent of being politically correct. Once these invisible authors decide what we should do, the market either follows or wastes a couple decades working up the nerve to throw the standards away.

Interoperability is important, but you have to operate before you can interoperate. Many of the leading-edge application ideas we have today are just too hazy to serve as the basis for firm technical standards. How can users, who can't really build a business justification for something like multimedia conferencing, critique the technical means of providing it? How can standards-writers, lacking any real market direction from users, be sure they are doing the right thing?

They can't. Standardization today is doing more to stifle ideas than to advance them, and the GOSIP position proves it.

Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (609) 753-0004 or via MCI Mail at 349-5845.

USER FORUM

by Douglas Welch

Consolidating points of contact will simplify network users' lives

Today's business users need a consolidated communications network that can provide each person with one phone number, one electronic mail address and high-speed access to the corporate local-area networks. Without it, the newly established electronic society is in danger of collapsing under its own complexity.

The average businessperson today has a home phone, a work phone, a cellular phone, several E-mail addresses, a facsimile number and sometimes even a dial-up modem number. Unfortunately, in the world of communications, more is definitely not better. Isn't it time technology made life simpler for network users instead of more complex?

The telecommunications industry should be the first group to push toward consolidating points of contact. An intelligent routing system should be developed that could determine the best method of reaching someone. One telephone number could provide for routing calls to a car phone if the person was en route, to their home if they were telecommuting or even to another office if they were at an off-site meeting. Through limited intelligence and direction from the user, businesspeople could actually be in touch with one another instead of having to call in every five minutes to check their voice mail.

While this may sound farfetched to some, the basic pieces are already in place. Most phone companies provide call forwarding, call waiting and other assorted features. Add intelligent routing to these features and you have the beginning of the end of multiple phone numbers. All that's needed is a little push from users and a little cooperation between telecommunications vendors.

The consolidation of network connections is the next phase that needs to be addressed. As telecommuting grows, the need for effective net connections from home to office is growing with it. It is all but impossible to establish a truly workable network connection from a home to an office. Even with 14.4 K bit/sec modems, it is still a long, slow road to the corporate LAN. Recently announced 2.88K bit/sec modems do not provide enough bandwidth and are just another in a long line of communications stopgaps.

Telecommunications companies have been touting the benefits of Integrated Services Digital Networks for years, and yet users are still waiting to experience them. Prototypes are fine, but users want results, and nothing short of a high-speed Ethernet connection will satisfy their growing demands.

There should be an easy way to connect corporate LANs to an international network that can be accessed from offices, homes and even pay phones. Whether this solution is provided by copper, fiber optics, infrared or wireless is immaterial to end users. They just want to access their data, not worry about how it gets there. They want to plug in their personal digital assistant (PDA), notebook or laptop and connect to the files and the people they need, when they need them.

Along with this network should come intelligence to find the user's data no matter where it may reside. A user's software, in coordination with their hardware and network, should be able to find a user's data whether it is located locally or distributed across a corporate LAN, an on-line service or even another user's PDA or computer. Users should be concentrating on using their data, not figuring out how to access it.

The final piece in the puzzle includes one address for electronic communications, including E-mail, electronic information delivery, beeper messages and even voice mail. Imagine the simplicity of receiving all these messages through a common interface. Instead of logging on here and dialing in there, all messages would be accessible from a hand-held or laptop device, no matter where the user was. It could even let user devices choose the best or most cost-efficient method of connecting to the user's data. Accessing this data through one standard interface would provide true productivity gains. It would also allow less savvy users to access the benefits that computer communications can provide.

While few would dispute the benefits of E-mail or LANs, their very complexity is an obstacle to their use. The establishment of single points of contact for telephone services, network services and electronic communications services would provide users an alternative to the complex systems of hardware and software they must now maintain.

By all means, let the world connect, but make it easier.

➾ Welch is a support analyst for a major entertainment corporation in Los Angeles. He can be reached via the Internet at 76625.3301@compuserve.com.

Letters

Docket at bay

Regarding the item in Briefs about the FCC looking into the possibility of charging for telephone numbers (April 11, page 2): Not a bad idea, and the upshot is that once one has paid for a number, he owns it. This is needed. Also, when you publish an item like this inviting comments to the FCC, please print the docket number or whatever reference one needs to reliably get one's comments to the right place.

Eric Bear Albrecht
Owner
Presto Computers
Taos, N.M.

Editor's reply: The docket number is Common Carrier Docket No. 92-237.

Media not enough

Regarding Ben Rothke's opinion column about a National Information Infrastructure consisting of print, broadcast and other media already being in place (April 18, page 47):

I use the current Internet to get near real-time astronomical images and meteorological images that aren't available via the print or broadcast media. I also use the Internet to look for book titles on library catalogs around the world. Lots of these titles aren't listed in *Books in Print* or easily accessible elsewhere.

Where can I go, except the Internet, to get the text of the North American Free Trade Agreement and European economic community documents in print?

Between the Internet and shortwave radio I get the information I want, none of which is necessarily available in newspapers, magazines or other print, or domestic broadcast media.

Craig Paul
Technical support programmer II
University of Kansas
Computer Center
Lawrence, Kan.

Idea up for grabs

Regarding Mark Gibbs' column, "A day in the life of the road 'worrier' " (April 18, page 28): I wonder how long it will be before some hotel makes all its rooms Internet-capable?

Someone should talk to existing mom-and-pop hotels and create a new Internet Hotel chain. They should wire all of the rooms with RJ-45 connectors, connect them to a dial-up Internet Protocol router running the Boot Protocol – or soon the Dynamic Host Configuration Protocol – and put in a dedicated phone line to your favorite local Internet provider. They should also require a minimum level of standard hotel services, and do national marketing over the Internet.

Sigh. If only I had the time to pursue all of my ideas. So feel free to publicize this one and maybe someone with guts and determination will do it.

Russell Nelson
President
Crynwr Software
Potsdam, N.Y.

Hotel hell

In his road 'worrier' column, Mark Gibbs states, "On the whole, hotels are really very behind the times technologically." I hear him loud and clear.

Couple the bad phones with the chest-level shower heads, chin-level desks and a dearth of power outlets (one out of four are free), and you'd probably be better off with a card table, a portable generator and a cellular modem. I can count on one

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Help desk

Continued from page 2

infect the workstation's hard drive if a user inadvertently leaves the disk in the workstation's A drive during shutdown. Later, when the user turns the workstation on, it attempts to boot from the A drive containing the infected diskette. The virus gets written into memory, and the hard drive becomes infected. And once the hard drive is infected, the QRRY virus remains in memory and infects other disks when they are accessed from that workstation.

To verify that your hard drive is infected with the QRRY virus, you can use a disk editor such as the ones provided in Symantec Corp.'s Norton Utilities or Central Point Software, Inc.'s PC Tools to examine the workstation drive's boot sector. If it is infected with the QRRY virus, the string "QRry" will be somewhere in the boot sector code.

To rid the QRRY virus from a floppy disk, try using the DOS SYS command; simply type SYS A: (or B: depending on which drive is being used) and press the Enter key. This command removes most boot sector viruses from floppy disks.

To eliminate QRRY from a hard drive running MS-DOS 5.0 or later, here are some steps for a quick fix:

■ Shut off your workstation to erase the virus from memory.

■ Boot the PC from an uninfected, write-protected disk, preferably a MS-DOS system disk that was included with the computer.

■ Insert another uninfected disk containing the FDISK.EXE program copied from a clean machine or use the same disk if it has FDISK.EXE. If you are using two disks, switch them so the FDISK.EXE disk is in Drive A before proceeding to step 4.

■ At the A: prompt, type FDISK MBR and press the Enter key.

■ Take all disks out of the drives, and reboot the system.

This procedure reconstructs the Master Boot Record if it has been corrupted by a virus without affecting the hard drive's partition information. It does not work with all viruses, however. There are some viruses that will actually destroy the hard disk's partition information during the Master Boot Record reconstruction.

For more information on protecting your network from viruses, call Jonathan Wheat at (717) 258-1816.

Letters

Continued from page 42

hand the number of times that I did not have to go to a pay phone in the hotel lobby just to make a credit card call or get an audible line.

John Klar
Member of technical staff
AT&T Network Systems
Newark, N.J.

Road-kill on Superhighway

Regarding James Carlini's column, "Plan ahead or get left in the dust on the Information Superhighway" (April 11, page 39):

It's getting harder to distinguish between commercials for laxatives, infomercials for psychic professionals and items about the Information Superhighway written by the lemmings of networking.

Who are the lemmings of networking? They are folks who expound on various technologies like Asynchronous Transfer Mode (ATM), Synchronous Optical Network (SONET) and Switched Multimegabit Data Service (SMDS), without ever having used them to build a network. They tend to write articles and books, and give speeches, lectures and seminars about how we folks in the trenches are behind the times in deploying new technologies in our networks. They are clueless and confused; thus, they follow popular beliefs — sometimes right off the cliff. And when there is a backlash against a new technology that is pushed upon the masses before it is sufficiently matured (like ATM, maybe?), they will be the first to tell you, "I told you this would happen." I've thought of offering my own seminar. How does ATM — Year None sound?

So, what is the Information Superhighway and who is building it? First of all, this Holy Grail of networks exists in the wee minds of marketers and politicians. But in reality there exists today a series of communications infrastructures, built and used by folks from government agencies like the Department of Defense, NASA and the National Science Foundation; organizations like universities, interexchange carriers and regional Bell holding companies; and with services like America Online, CompuServe and many others. These infrastructures, with their nets and services, form the platform for research and development in new technologies and services (like ATM), which may provide the masses with a wide variety of services. For the grunts in the trenches who are building these nets, less hype and more reality would be appreciated.

Technologies and services such as ATM, SONET, SMDS and frame relay can be considered tools in a networker's tool kit, to be used to support the end user's communications requirements. Just as a carpenter uses many tools to build the framework of a house, a networker will use many tools to build a network.

Are these technologies and services ready for deployment? To various degrees, yes. ATM, for example, can become an integral part of your net today, if deployed judiciously. ATM makes some sense today as a net backbone, a workgroup interconnect or as a replacement for long-haul point-to-point lines. But it's not for everyone, yet. SMDS and frame relay also make sense. Of course, all are driven by cost.

So, instead of worrying about ending up in a ditch, side street or dead end on the Information Superhighway, hop in your favorite vehicle and have fun. You may even help the cause by adding to the road-kill count along the way.

Jim McCabe
Mountain View, Calif.

More about FASB

In response to your editorial about the proposed Financial Accounting Standards Board (FASB) standards for stock options (April 4, page 90):

An article that ran in the Outlook section of the March 20 *Washington Post* (page C5) presented a very balanced review of the problems that FASB is trying to address.

John Gable
Consultant
JLG and Associates
Arlington, Va.

Editor's reply: To order a back issue of the Washington Post *containing the aforementioned article, call the* Washington Post *at (202) 334-7239.*

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NETWORK WORLD TEST ALLIANCE

Riding the Internet *on a* chameleon

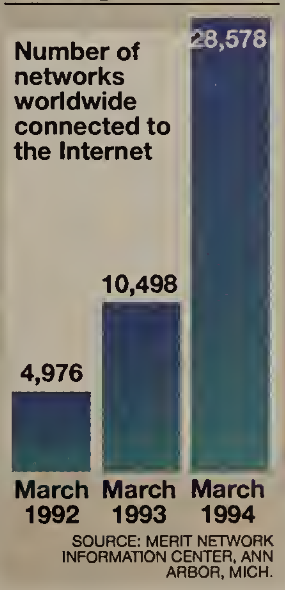
NetManage, Inc.'s Internet Chameleon delivers the world of Internet services to the Windows desktop.

BY HOWARD MARKS

Despite the booming interest in the Internet, connecting is still not a straightforward task, especially for the uninitiated. Large corporate sites use routers or gateways to link their local-area networks to the Internet through leased-line connections. While fine for large sites, this approach is not suitable for smaller sites and workgroups that cannot justify the costs.

These users have focused on less costly dial-up solutions. Until recently, this meant running a full-blown Transmission Control Protocol/Internet Protocol package with dial-up support and hunting through manuals for the few pages explaining the steps for configuring a Serial Line Internet Protocol (SLIP) connection. Not always an easy task.

Getting connected



SOURCE: MERIT NETWORK INFORMATION CENTER, ANN ARBOR, MICH.

Enter Internet Chameleon from NetManage, Inc.

Designed specifically for dial-up access to the Internet, it is among the first wave of personal computer tools intended to ease the headaches associated with accessing the Internet. It allows users to connect their PCs to the Internet as full TCP/IP hosts, and it supports Point-to-Point Protocol (PPP), SLIP and Compressed SLIP.

We liked Chameleon. It's particularly well suited to remote or mobile users who need access to the Internet's vast resources and don't want to spend time learning the intricacies of Unix-based systems. This Windows application provides an intuitive, front-end interface to the sometimes arcane world of Unix and TCP/IP.

Internet Chameleon is actually a subset of NetManage's flagship package, Chameleon. The complete package includes 3270 and 5250 terminal emulation for connections to IBM host computers, a front-end to IBM's Professional Office System (PROFS) and OfficeVision host electronic mail systems, remote printer support for Unix hosts and, most significantly, TCP/IP support for LAN cards.

Internet Chameleon comprises several different Windows programs, which provide Telnet terminal emulation, File Transfer Protocol (FTP) and Trivial FTP (TFTP) file-transfer capabilities, as well as E-mail services. In addition, users can employ familiar applications, such as Gopher, PING and Finger to search for files or users on the Internet.

Internet Chameleon also supports the Windows Socket Application Program Interfaces, allowing it to interoperate with specialized third-party applications.

GETTING STARTED

Before installing the software, users should establish an account with an Internet access provider. The decision should be made carefully. In addition to price, the services offered differ in several important areas. Users should consider the number and location of the provider's points of presence (POP) and determine if the vendor offers roaming accounts.

Some providers, for instance, offer dial-in accounts that include fixed IP addresses, which require users to always dial in to the same POP. Other providers use dynamic IP address assignment systems, allowing users to access the Internet from any POP. Roaming is an essential feature for users planning to use Internet Chameleon from the road.

Internet Chameleon is designed to be installed quickly. We installed the software and established our first connection in less than 10 minutes. Of course, it helped that we had already set up an Internet account. The installation simply requires information such as the account name, password and telephone number.

Unlike most TCP/IP packages for Windows, Internet Chameleon doesn't need any special device drivers or terminate-and-stay-resident (TSR) programs to implement the TCP/IP protocol suite. Instead, it uses Dynamic Link Libraries so users don't have to sacrifice any of their PCs' conventional memory.

During installation of the product, we discovered that it only includes setup information for Hayes Microcomputer Products, Inc., Telebit Corp. and Multitech Systems, Inc. modems.

For some users, this may mean manually adding the appropriate modem command strings. And users that just ran out to purchase the latest 28.8K bit/sec V.fast modems will be disappointed to learn that Internet Chameleon doesn't support serial port speeds over 19.2K bit/sec.

Internet Chameleon includes prewritten logon scripts for use with several major Internet services, including Alternet and CERFNet. These preconfigured setups include Domain Name Server information and already have the necessary SLIP or PPP interface information. Users simply have to provide the specific information about their accounts such as the phone number, account

Continued on page 45

NET Result

Product:

Internet Chameleon

Key findings:

- Includes scripts for connecting to most major Internet access providers.
- DLL-based architecture requires no TSRs.
- Supports modem speeds up to 19.2K bit/sec.
- Lost connections are not always reported.
- Implemented as separate Windows applications with no master program.

Price:

$195

Platforms:

Intel 80386, 80486 and Pentium workstations

Requirements:

- Windows 3.1
- 4M bytes of RAM
- Modem
- SLIP or PPP connection

Vendor:

NetManage, Inc.
20823 Stevens
Creek Blvd.
Cupertino, Calif. 95014
(408) 973-7171

Continued from page 44

name and password.

Users who need to connect to other providers will have to create their own logon scripts. Unfortunately, the script syntax is quite terse — similar to the regular Unix expression syntax that uses $ codes to represent carriage returns and other values. There is also no "learn" mode to allow users to create scripts simply by recording keystrokes. Users who have grown accustomed to more robust scripting languages, such as those offered by communications programs like Digital Communications Associates, Inc.'s CrossTalk or Datastorm Technologies, Inc.'s Procomm Plus, will be a little put off by these limitations.

Internet Chameleon's applications

Application	Function
FTP, FTP server, TFTP	File transfer
Mail	E-mail
PING	Network diagnostics
Telnet	Terminal emulation
Whois	User lookup
Newt	Network statistics and information
Newt News	News reader
Gopher client	Browsing tool
Finger	Information about other users

Once the software has been installed, the Windows program manager will display 13 new Internet Chameleon icons. In addition to a Read Me file, there are Finger, PING, FTP, TFTP, Telnet and Whois icons (see graphic). By double-clicking on these icons, users can launch programs that provide the Windows interface to the matching Internet application.

We particularly liked the FTP program, which provides a view of the directory structure on both the local system and the remote FTP server. Arrow buttons allow users to change, copy, view and delete files on either machine.

During the actual file transfer, a sliding bar display indicates how much of the task has been completed, as well as the effective data-transfer rate.

Unfortunately, connecting to an FTP server is not quite so elegant. A dialog box allows users to enter the server's host name, a user identification and a password. Easy enough. But what was missing was built-in button support for anonymous FTP connections.

There are myriad sites on the Internet that permit users to log on anonymously to download files without first establishing a personal account. The standard convention for accessing these sites is to use "Anonymous" as the logon and an E-mail address as the password. Given the prevalence of these sites, it would have made sense for Internet Chameleon to provide an automatic logon mechanism, rather than force users to type — and possibly misspell — the information.

THROUGH SNOW, SLEET OR RAIN

Internet Chameleon's mail reader connects to a remote server running Simple Mail Transfer Protocol and Post Office Protocol. When Internet Chameleon establishes a connection with the server, it downloads the pending messages.

The product's mail reader also permits users to create E-mail messages on the PC — before connecting to the Internet access server. These messages can then be uploaded to the server en masse when users connect. This conserves valuable connection time.

Users can create folders to store and organize their mail messages. They can also establish rules for handling messages. For instance, users can instruct the mail reader to direct messages from specific users or those that contain specific text strings in the From, To or Subject fields to designated folders as soon as they are received. Rules can even be set up to automatically forward any message with the words "order" or "deadbeat" in the Subject field to another user.

Internet Chameleon also provides facilities for dealing with binary files. It supports Multiple Internet Mail Extensions, allowing users to attach binary or image files to their messages. In addition, it supports uuencode for translating ASCII files to binary format and uudecode, which translates binary data to ASCII. Uuencode and uudecode are useful for exchanging binary data with older mail systems.

ALL THAT'S FIT TO DOWNLOAD

The Newt News icon calls up a full-featured reader for Usenet news that reads messages in any of the over 4,000 Usenet news groups across the Internet. When it is invoked for the first time, Newt News will download the news group list from the remote news server. Thereafter, it will update the news groups and, after downloading the additional data, display the total number of read and unread messages in each group.

Depending on the number of news groups that need to be updated, this can be a potentially time-consuming operation. Users, like us, who subscribe to many groups but just want to quickly check a couple, should click on the Cancel button to abort and update the groups individually. It is faster than waiting for Newt News to update the ever-popular alt.barney.dinosaur.die.die.die news group.

The product's Gopher front end is adequate. It allows users to search the Internet for data using the Gopher protocol, providing access to the vast information warehouses on Gopher servers throughout the world. So what's missing? We'd like to see inclusion of GIF and JPEG viewers to allow users who download images — tasteful ones, we hope — to view them.

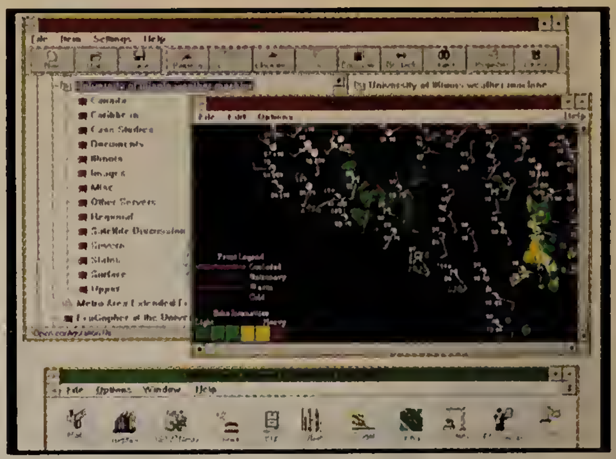
Internet Chameleon is a big step in the right direction, but it does fall short in some areas. The main problem is the lack of a central administration program. Many PC users may be more comfortable with a single master program that, when invoked, dials the phone number, automatically checks for E-mail and provides access to the other utilities.

And, at times, this application shows its LAN TCP/IP roots. The news reader, for example, displays an hourglass cursor when loading long messages. This is a fine idea for transfers that take place over a 10M bit/sec Ethernet line but is not wholly appropriate to a dial-up situation. A sliding bar, or some other indicator, would provide more information about the status of data transfers.

The most annoying flaw we uncovered, however, was Internet Chameleon's response — or, more accurately, lack of response — to broken connections. We lost our connection to the server several times but didn't know it until we tried to connect to a remote host or when one of our file transfers timed-out.

Internet Chameleon does provide a setting for automatically redialing the remote server when the connection is lost, but we'd much rather see a dialog box pop up that notifies us of a broken connection and gives us the option to redial.

There is context-sensitive help available, and the manual, which is well produced and clearly written, will resolve most problems. Unfortunately, it doesn't go quite far enough in explaining Internet basics and terminology. But with the glut of books about the Internet on the market, users shouldn't have much trouble figuring out what they need to know.



Users can connect to the internet, search for data, download files and display information, such as this satellite weather map.

All in all, Internet Chameleon is a good package for Internet users looking for a full-featured connection from stand-alone Windows systems. It provides full access to all of the resources on the Internet through the TCP/IP protocol stack and the Windows Socket interface for add-on products.

With a little more polish, it will become a valuable tool for the growing legions of Internauts.

➻ Marks is a principal of Networks Are Our Lives, Inc., a Scarsdale, N.Y.-based network and consulting firm. He can be reached via E-mail at hmarks@pipeline.com.

HOW WE *did it*

We installed and tested Internet Chameleon on two PCs. We used a Dell Computer Corp. Dimension XPS 486/66 with a Boca Research, Inc. Internal 14.4K bit/sec modem and a Toshiba America Information Systems, Inc. T1900 laptop equipped with a Microcom, Inc. Deskporte Fast 28.8K bit/sec modem. We used a SLIP Internet connection provided by Performance Systems International, Inc. and a PPP connection from UUNET Technologies, Inc.

Riding the Internet wave

There are alternatives to products such as NetManage, Inc.'s Internet Chameleon. Some Internet access providers not only provide the connection, but also the software interface. The obvious advantage for users is that they don't have to bother installing and maintaining the software. That's done by the provider.

We were more than a little curious about this approach, so we did a little investigating. Our first stop, The Pipeline in New York.

With a service like The Pipeline's, users don't need to know about things like Internet Protocol net addresses and domain names. Once they connect to the service, they can install The Pipeline software. The only input parameters they need to know are account name and password. The Pipeline software can even determine the baud rate of the user's modem, as well as the COM port to which is connected.

The Pipeline's software includes a mail reader, which supports Multiple Internet Mail Extensions, as well as a news reader and Telnet. There is also a unique, easy to follow interface for FTP, Gopher, Archie, Veronica and Jughead utilities, making it a snap for users to locate and download files from remote sites.

Unlike Internet Chameleon, The Pipeline doesn't use SLIP or PPP to communicate with a user's PC. Instead, it uses a proprietary block asynchronous data protocol dubbed Pink Slip to send data from the PC to The Pipeline's Sun server.

Because The Pipeline application and the Pink Slip protocol are inexorably linked, The Pipeline can run multiple data streams over the same modem connection. These data streams can be throttled, as well, so that certain tasks get higher priority access to the phone line. For instance, when a user initiates a file download, the transfer will use the line's entire bandwidth. However, if a Telnet session is started while the transfer is still taking place, it will assume a higher priority and push the file transfer into the background.

Using a service like this has its advantages, but there are also disadvantages. The Pipeline's software didn't provide all of the capabilities that we needed. We discovered this when we wanted to send some files via FTP to another site. While The Pipeline provides an easy FTP interface for downloading files, it doesn't provide any uploading mechanism. The Pipeline's architecture also does not support WinSocket APIs, which means that users cannot take advantage of third-party tools like Cello, Mosaic and WinGopher.

Until recently, using The Pipeline as the on-ramp to the Information Superhighway was cost-effective only for New Yorkers because users had to access The Pipeline by calling its New York access number or connecting across the Internet via rlogin.

The Pipeline will also be available through the Sprintnet public data network, so users nationwide can take advantage of The Pipeline for just $2.50 to $5 per hour more than what New Yorkers pay.

The Pipeline is an attractive alternative for Windows users yearning for a simple connection to the Internet. More sophisticated internauts, however, will probably opt for more standard tools that support Windows Sockets.

H. Marks

Management wares draw ire of enterprise users

Continued from page 1

In their wish list of improvements, survey respondents call for vendors to buck up automation facilities, expand the capacity of existing platforms to handle the number of nodes and objects found in enterprise networks, and deliver crucial data repositories that make data sharing possible. But perhaps the one concern voiced repeatedly from users across a spectrum of Simple Network Management Protocol management, hub and systems management issues is that vendors need to do a far better job integrating net management platforms with applications available to run on them (see graphic, this page).

Users' management wish list

Improvements survey respondents need from vendors.

SNMP platforms
- Better application integration
- Improved automation
- Integrated management repository
- Domain management

Hub management applications
- End-to-end management, not just device control
- Improved automation
- Better integration with applications
- Virtual LAN management

LAN management applications
- Improved asset tracking
- Traffic analysis applications
- Increased automation
- Better integration between applications

Systems management applications
- Increased automation
- Better application integration
- Desktop Management Task Force-compliant products
- Improved quality of applications

SOURCE: MCCONNELL CONSULTING, INC., BOULDER, COLO.
GRAPHIC BY SUSAN SLATER

As part of its Reader Advocacy Force mission to assist readers, *Network World* plans to revisit this wish list of net management needs to measure just how well — or poorly — key suppliers address these concerns in the coming months. Along those lines, readers can keep the publication apprised of their net management needs and their specific product experiences by contacting it via the R.A.F. Hotline (800) 622-1108, Ext. 487, or by sending an Internet message to nwraf@world.std.com.

The study — which was financially underwritten by *Network World,* Cabletron Systems, Inc., Chipcom, Inc., Cisco Systems, Inc., IBM, NetLabs, Inc., SynOptics Communications, Inc. and 3Com Corp. — examined satisfaction levels with SNMP management platforms, hub management applications and systems management tools. *Network World* retained full editorial control of the survey and article development; vendors did not have any role in shaping the editorial product.

PLATFORM REFORMS

Management platforms are the foundation for enterprise net management; they provide an environment for integrating multiple management applications and sources of management information. The survey focuses on major platforms based on SNMP, including: SunConnect's SunNet Manager, Novell, Inc.'s NetWare Management System, IBM's NetView/6000, Hewlett-Packard Co.'s OpenView, NetLabs' NetLabs Manager and Cabletron's Spectrum. Smaller numbers of other platforms were mentioned such as HP's OpenView for Windows, Proteon, Inc.'s OneView, and Digital Equipment Corp.'s Polycenter. Several respondents mentioned hub management applications such as Cabletron's RemoteView and SynOptics' LattisNet.

One of the survey's most jarring discoveries is that many users of net management platforms are still not using these products for managing their networks on an enterprise basis. The average number of managed elements per platform in respondent networks was just 150, and more than two-thirds of those surveyed say they manage 500 elements or fewer, while only one-sixth manage more than 1,000 elements. While SNMP management platform vendors have positioned their offerings as enterprise managers, survey results show the products lack the punch to operate in that capacity.

Enterprise network management systems need to manage thousands of elements — not only the hardware devices, but also the applications and processes running over the network.

Interestingly, the survey shows that nearly 33% of the users surveyed are using the same product to manage their systems, as well as handle oversight of the network.

The relatively small base of managed elements among survey participants suggests that users are implementing their products to control individual local-area or campus nets. It seems as though users are waiting for critical add-ons, such as delivery of data repositories, before they deploy the products on an enterprise basis.

Other platforms that incorporate non-SNMP equipment — such as Boole & Babbage, Inc.'s Command Post and NYNEX Corp.'s Allink — may be filling the role that SNMP platforms were supposed to play. These products are designed to manage thousands of devices and provide the integrated data repositories users need today, although these products are still largely focused on non-SNMP environments.

The overall impression among participants is that network and system management vendors still have substantial work to do in order to deliver the kinds of high-value functions that managers and administrators require. The relative dissatisfaction with automation, application integration, and the requirements for distributed integrated management repositories all indicate that users still feel their current products are short of the mark.

PLATFORM SATISFACTION

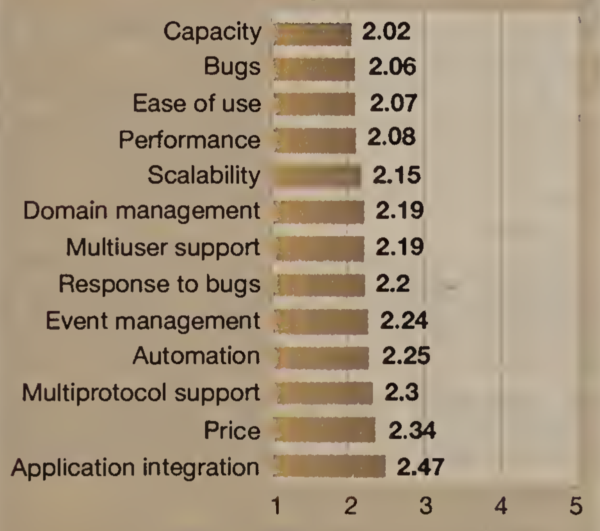
Users were asked to express their satisfaction with different platform attributes, looking at such things as their platform capacity, ease of use, performance, scalability, event management, automation and other attributes (see graphic, this page). Overall product satisfaction levels hovered around "somewhat satisfactory" at best, and ratings dropped off to "only adequate" with several key attributes.

Taken as a whole, the survey findings indicate the overall level of satisfaction with platform functions and features to be less than somewhat satisfactory and better than only adequate. Many important functions, such as the level of automation and the ability to automate tasks, are not very satisfactory at this time. The least satisfactory attribute is the integration level with applications running on the management platform. This indicates that administrators need much higher levels of integration, beyond the network map and pulldown menu level. It also demonstrates that users could prod application vendors to add more functionality in order to compensate for unsatisfactory platform capabilities.

The highest rating went to platform capacity — the number of elements managed and events processed — but even that was characterized by users as only "somewhat satisfactory." Users also characterized product quality (few serious bugs), ease of use, performance and scalability as somewhat satisfactory. Respondents were least satisfied with their platform's automation, event management, ability to manage multiple protocol environments, price and the level of application integration. Dissatisfaction with price is not surprising, but the other features are all important for delivering solid management solutions.

Management platform ratings

Responses range from 1 for extremely satisfied to 5 for extremely dissatisfied.

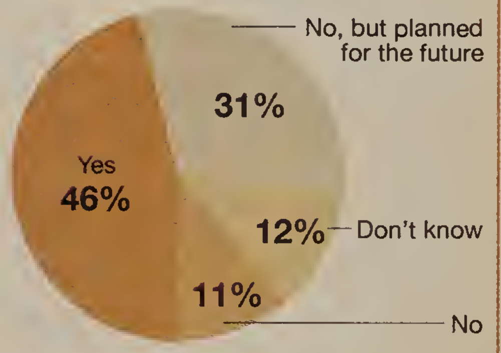


SOURCE: MCCONNELL CONSULTING, INC., BOULDER, COLO.
GRAPHIC BY SUSAN SLATER

"I believe [vendors] are doing about as well as can be expected, considering the rapid rate of change in applications," says David Baker, a senior analyst at Williams Information Services Corp. in Tulsa, Okla. "Vendors I pick are the ones who claim they have an open systems focus. As long as their new products and upgrades continue to show that focus, I continue to select them."

But not all users were as supportive. The lack of applications integration translates into missed opportunities to use management data, according to Michael Richey, a network administrator at the University of California, Irvine. "An icon that displays an alarm isn't really very useful to me. From a technical viewpoint, I really need more information than color changes."

Does your network support integrated systems and network management?



Executives at companies that supply SNMP management platforms say they are addressing many of the concerns users raised.

"Automating processes requires elements such as integrated repositories and applications," says Roselie Buonauro, vice president of marketing at NetLabs in Los Altos, Calif. "Managers need extensive customization to build in constraints and boundaries. These functions will evolve over time."

Automation capabilities are not only getting a fair amount of attention among the users surveyed, but among vendors, too. HP and IBM, for instance, are placing more automated decision-making in their Intelligent Agents and Systems/Monitor 6000, respectively. HP stresses, however, that automation is not purely a platform issue, but that automation facilities also need to be built into the applications that ride on top of management platforms.

But the issue of who provides automation facilities is secondary to users; they just want to see increased automation from management products across the board.

Event management is needed for sorting through large volumes of management information and identifying those events that require attention. Administrators define rules for selecting key events, allowing them to customize their operations. "I am dissatisfied because I have to write and test all those rules," says Seng Gian, information systems engineer at Texaco, Inc. "There aren't many prepackaged rules." Automation is a key ele-

Continued on page 47

Continued from page 46

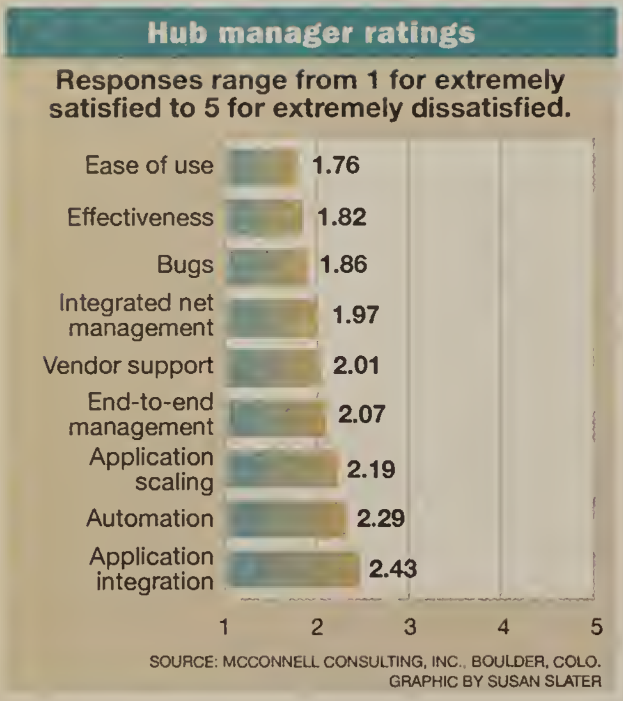
ment for leveraging staff and scaling enterprise management solutions through replacing human-driven activities with automated actions.

"The intelligence is being built into our system to detect and correct 80% of all conditions that normally would require operator or engineer intervention," says Thomas Allen, a network administrator at a national do-it-yourself home improvement supplier.

The key to better integration is a common data model, which would enable applications to more easily share information. An upstart group of management applications vendors, which recently banded under the label Management Integration Consortium, will address this issue with management platform vendors.

Hub manager ratings

Responses range from 1 for extremely satisfied to 5 for extremely dissatisfied.



SOURCE: MCCONNELL CONSULTING, INC., BOULDER, COLO.
GRAPHIC BY SUSAN SLATER

Tighter integration of management applications with the platform is also needed to improve information sharing. Administrators want to build management processes that cross various applications; they need automation and integration facilities to accomplish this common data model.

There are many seemingly simple integration issues, for instance, that have not been addressed by vendors. Vendors today do not build net management applications to be started by other applications. That's largely because platforms don't make that type of integration simple. Today, users have to edit and change configuration files, which is time-consuming and highly customized. A lot of users are scared off by this level of customization because they don't want to mess up what already is working.

The lack of data repositories and weak event management correlates to the integration woes users face. Since there is no shared information repository, it is difficult to share information. And better event management would make it possible to hook applications together to trigger responses to certain network events.

Ideally, users should be able to activate one application from within another. Suppose, for instance, a monitoring tool indicates a router has exceeded a threshold. That monitoring program should be able to activate a diagnostic program to determine the problem, which in turn should launch a trouble-ticketing application that logs the problem and the steps taken to correct it. Currently, vendors do offer a reasonable amount of automation, but many fall way short of giving users the capabilities necessary to create a string of automated events — in effect, automating a process instead of a single step.

"I think the example of the lights-out glass-house model that was popular in the '80s needs to come to networking: as automated an operation as possible," says Mark Wiesenberg, a network manager at Brookhaven National Laboratories, in New York. "I want to makes fixes before our customers know something is broken."

While automation was high up on users' wish list of improvements, the survey also raised the need for integrated management repositories to store and provide common access to data.

Survey respondents also were asked that if they had $10,000 to spend on improvements to net management platforms, how they would allocate the money for improvements. About one-third of respondents said they'd channel money toward improved automation, while one-quarter would address integrated management repository needs and another 25% would expand management platform capacity.

Domain management, a fundamental requirement for distributed enterprise scale management, received a much lower investment priority. It represents the ability for multiple platforms to work cooperatively with each other in managing pieces of a larger environment. Almost all SNMP platform vendors have sworn they will provide domain management in the next major releases of their products.

This lack of immediate interest from users in domains represents the relative immaturity of SNMP platforms today; administrators are still focusing on the fundamental services they need for moving to an enterprise management level.

HUB MANAGEMENT

Many of the same issues users raised with their SNMP management platforms surfaced again for their hub management products. The message here echoed the need for increased automation and better integration with other management applications.

But more importantly, users said vendors need to move beyond managing just their hubs to offering tools that oversee and control other devices and services, as well as the data and processes that run over the network. In effect, they want end-to-end net management of their hubs and LANs.

Customer satisfaction with hub management applications is relatively higher than for equivalent platform features. Ease of use, effectiveness in solving problems, the quality of the products in terms of number of errors or defects, and the ability to integrate the management of multiple networks — such as token ring, Ethernet and Fiber Distributed Data Interface — were all rated above the somewhat satisfactory level (see graphic, this page).

In a similar vein to the SNMP platforms, scalability, automation and the level of integration of hub management tools with other applications all received the lowest levels of satisfaction ratings.

When we asked users to identify their top priorities for improvements if they had the responsibility, 38% would single out increases in automation, 29% would earmark money for applications integration, 15% would address management of virtual LANs and another 15% would tackle applications scalability.

The message seems to be that there is still a fair amount of difficulty in getting high-value automation. Users feel these products are only useful in campus environments, largely to automate responses on a very limited scale, automating pieces of a process but not an entire routine.

Hub vendors say they are addressing the issue to broaden the scope of their offerings.

"One of the primary elements of 3Com's Transcend net management architecture is managing the network, not just the point products," says Lionel DeMaine, product line manager for Transcend.

> **The short-term outlook is that network and system management vendors still have substantial work to do in order to deliver the kinds of high-value functions users need.**

John Burnham, a spokesman for Cabletron, says the company's object-oriented Spectrum relates the components of a network so users can see a LAN-centric view of activity, providing end-to-end management instead of just controlling devices.

Other vendors, such as SynOptics, are also addressing the usefulness of their products. SynOptics is working on enhancements to its Optivity, for instance, that will make device management less visible to users, instead focusing on managing processes occurring at the hub and LAN level.

Likewise, hub vendors recognize the importance of bolstering automation facilities. One trend that will help bolster automation is the move to embed more powerful processing elements throughout the managed environment. By decentralizing processing to the hubs, users will gain improved data collection and analysis, and a reduction in bandwidth consumption. Local processing will eventually introduce applications that will act locally to correct problems.

Today, 3Com's Transcend SmartAgents allow automation of various operations in 3Com devices. For instance, the Transcend FMS SmartAgent can automatically determine baselines and then take actions when the hub starts operating outside a defined range. Actions that can be performed automatically when these thresholds are exceeded might include enabling/disabling a port or module or switching to a resilient link.

3Com's future plans include allowing SmartAgents to monitor their other agents and take actions as appropriate. The vendor also plans to offer more local data collection and filtering before forwarding data across a wide-area network to the management application, thereby saving backbone and router bandwidth.

Chipcom will continue to build on its management position. Embedded processors will focus on local data collection, analysis and response. The central site will receive reports on actions rather than problems, a move Chipcom Senior Product Manager Frank Hiatt says is a step toward self-healing networks.

3Com's Transcend WorkGroup Manager will be the first solution on the market to enable net managers to group users into virtual workgroups so that personal computers can be managed together as an entity, regardless of their physical connectivity.

Like SNMP managers, the biggest knock against hub management applications is the need for improved applications integration.

But hub management application vendors are taking an interesting stance, as many claim integration is the responsibility of the management platform, not underlying applications.

Cabletron claims that applications integration is inherent in its Spectrum product. "Rather than merely launching third-party applications, which have little or no hooks to the underlying platform, Spectrum's design provides the manager with useful information," says Cabletron's Burnham. "The platform should act as a repository of information that can be shared among all integrated applications as defined by a manager." A platform that merely acts as a launching pad for applications is no more useful than a Unix operating system, he says.

MANAGING THE LAN

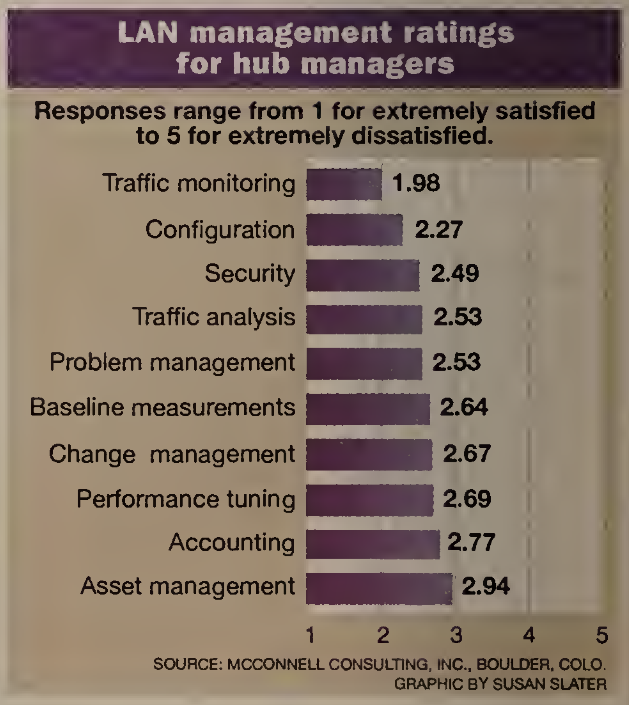
One aspect of hub management applications we explored is their ability to manage LANs. Users identified a number of issues that need immediate attention by vendors, including asset management, accounting mechanisms, performance management, change management, problem management, traffic analysis and security (see graphic, this page). Only traffic monitoring — a relatively simple LAN management service — received a rating of somewhat satisfactory.

Limited functionality in individual applications and poor integration between management applications are the cause of dissatisfaction in these basic and critical LAN management tasks. Eighty percent of the tasks received a somewhat satisfactory to only adequate rating.

Survey respondents indicated they would like to see immediate improvements first to traffic analysis. LAN administrators need better tools that help them understand the complex traffic flows within an internetwork. "I need more help to optimize my LANs; I need to know where to segment and where switching will really help," says one network planner at a worldwide entertainment company who requested anonymity.

LAN management ratings for hub managers

Responses range from 1 for extremely satisfied to 5 for extremely dissatisfied.



SOURCE: MCCONNELL CONSULTING, INC., BOULDER, COLO.
GRAPHIC BY SUSAN SLATER

Automation is another important future investment priority as it was for platforms and hub management. Clearly, the industry has not delivered adequate automation capabilities to the customers.

We believe that correlation technologies will be increasingly important in the future. Administrators must build rules for handling the occurrence of multiple events, enabling them to sift through a flood of information and extract the most likely or most important events to respond to first.

HOPEFUL, BUT STRUGGLING

The short-term outlook is that network and system management vendors still have substantial work to do in order to deliver the kinds of high-value functions users need. The relative dissatisfaction with automation, application integration, and the requirements for distributed integrated management repositories all indicate that users still feel their current products lack the full suite of capabilities they need.

Managers remain optimistic, and many appear satisfied that their vendors are working to bring better solutions to an immature field. But rather than play a passive role, users might well benefit by forcing vendors to come to grips with how customers are managing their nets.

Consider the opportunities. Users could band together with backers of the recently formed Management Integration Consortium to force issues into the open and serve as a catalyst to get vendors to address them according to customers' timetables.

User concerns with regards to net management products are not unique. Vendors may argue that each customer's net management environment is different and subject to a customized installation. But the concerns are the same, across SNMP managers, hub managers and systems management tools.

At the very least, the improvements identified by survey respondents should serve as a short list for vendors — a list tantamount to top priorities that need to be addressed immediately. During the next several months, *Network World* will continue to examine vendor responses to these management needs. We'll present our findings in the fall with a thorough evaluation of the steps major vendors have taken to improve customer satisfaction with the products they use.

➻ McConnell is president of McConnell Consulting, Inc., based in Boulder, Colo. He may be reached via the Internet at johnmc@csn.org.

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Systems mgmt. tool earns low marks

Network managers critical of management platforms and related applications left no doubt that they are also dissatisfied with systems management products.

Of the 200 users surveyed, 67% employ systems management tools. And 51% of those users with systems management tools said they use the same product for network management. Asset management capabilities, applications integration and software license management rank lowest in user satisfaction.

A significant number of system management functions received "only adequate" ratings, including desktop management, security management, accounting and automation, software distribution and problem management.

Reliability of systems management products — defined as having few bugs or defects — ranks highest in vendor satisfaction, but even that capability rates as less than somewhat satisfactory.

Another interesting perspective is the number of systems administrators who are not using a basic complement of systems management tools. For instance, accounting, software distribution, licensing and asset management are not used by more than 20% of the administrators surveyed. Fifteen percent or more do not use desktop management, virus protection, or problem or security management tools. While these organizations may be running blind in some sense, they also are likely waiting for better tools before they invest.

In terms of product improvements, users would like to see tighter integration with the management platform and other tools, increased functionality and an integrated management repository. These represent almost 90% of the investments users would make if they had direct authority to do so.

Interestingly, almost one in three respondents said they want to see support for Desktop Management Task Force (DMTF)-compliant products. We believe this priority will become increasingly important to users if DMTF products are delivered to the market in a timely fashion and can demonstrate solutions of value to overworked system administrators.

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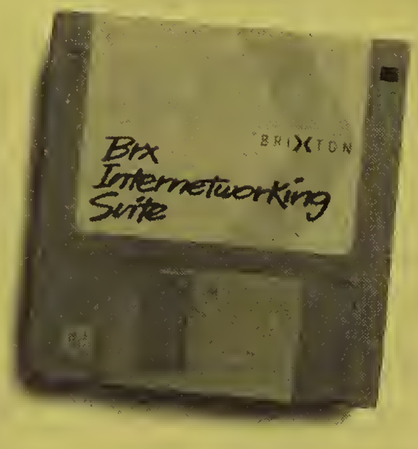

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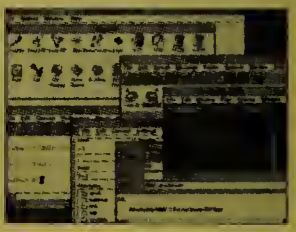

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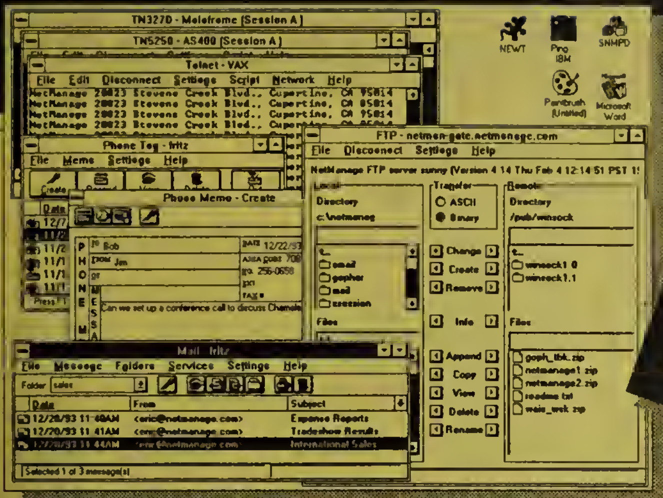

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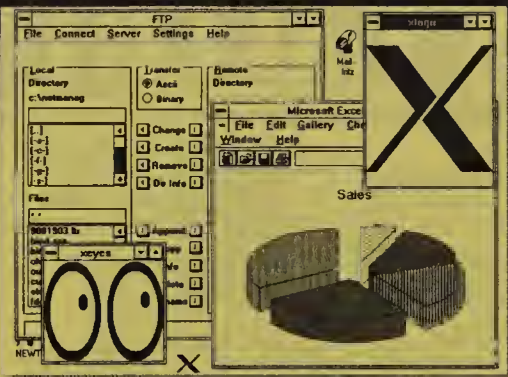

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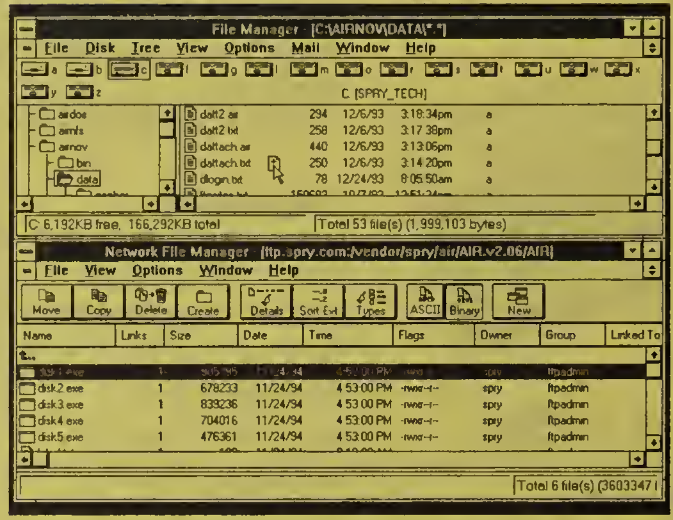
File Manager - [C:\AIRNOV\DATA\*.*]

File Disk Tree View Options Mail Window Help

C: [SPRY_TECH]

airdos
airnfs
airnov
bin
data

daft2.air	294	12/6/93	3:18:34pm	a
daft2.txt	258	12/6/93	3:17:38pm	a
daftach.air	440	12/6/93	3:13:06pm	a
daftach.txt	250	12/6/93	3:14:20pm	a
dlogin.txt	78	12/24/93	8:05:50am	a

C: 6,192KB free, 166,292KB total

Total 53 file(s) (1,999,103 bytes)

Network File Manager - [ftp.spry.com:/vendor/spry/air/AIR.v2.06/AIR]

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Move Copy Delete Create Details Sort Ext Types ASCII Binary New

Name	Links	Size	Date	Time	Flags	Owner	Group	Linked To
disk1.exe	1	[illegible]	11/24/94	4:53:00 PM	[illegible]	spry	ftpadmin	
disk2.exe	1	678233	11/24/94	4:53:00 PM	-rwxr--r--	spry	ftpadmin	
disk3.exe	1	839236	11/24/94	4:53:00 PM	-rwxr--r--	spry	ftpadmin	
disk4.exe	1	704016	11/24/94	4:53:00 PM	-rwxr--r--	spry	ftpadmin	
disk5.exe	1	476361	11/24/94	4:53:00 PM	-rwxr--r--	spry	ftpadmin	

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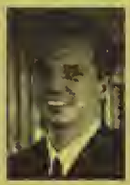
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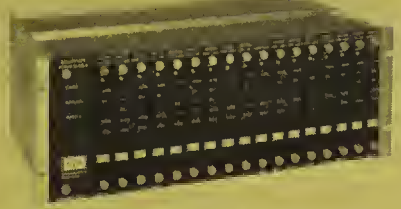

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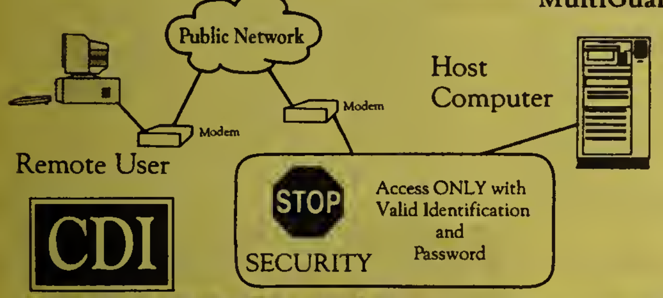

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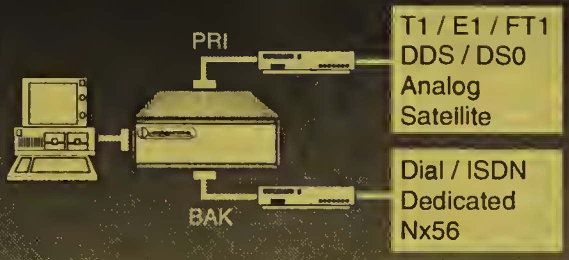

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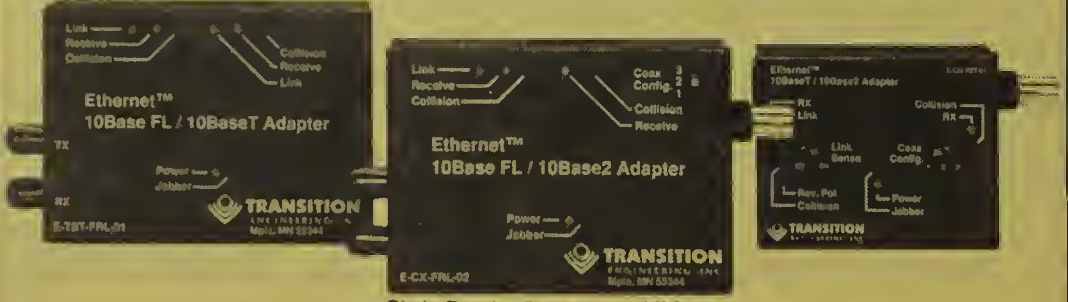

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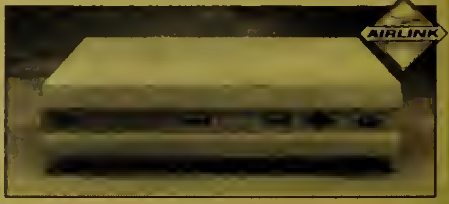

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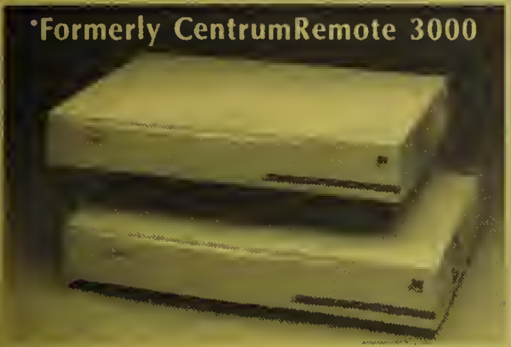

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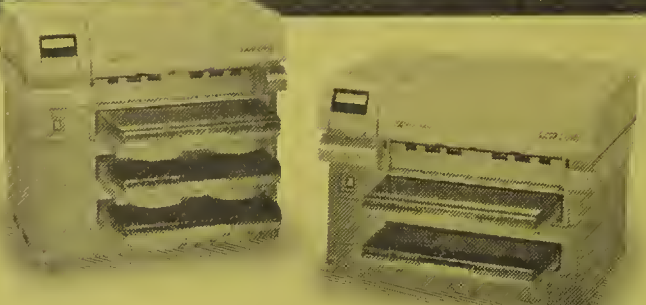

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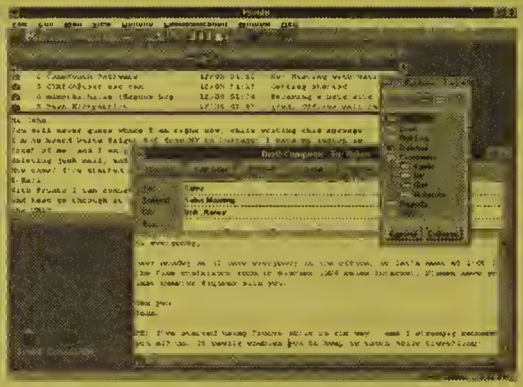

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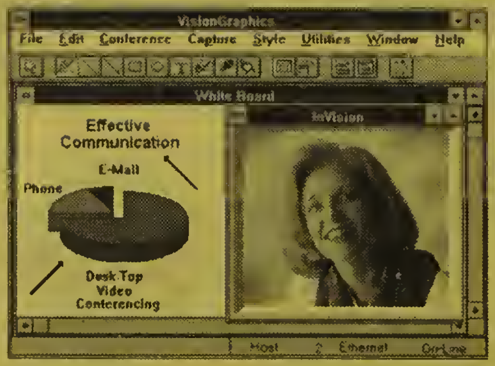

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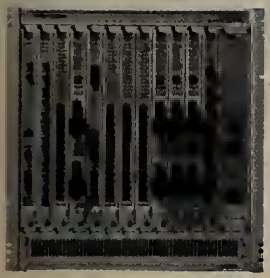

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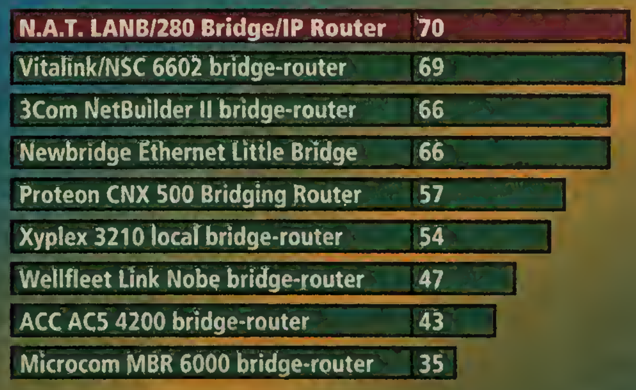

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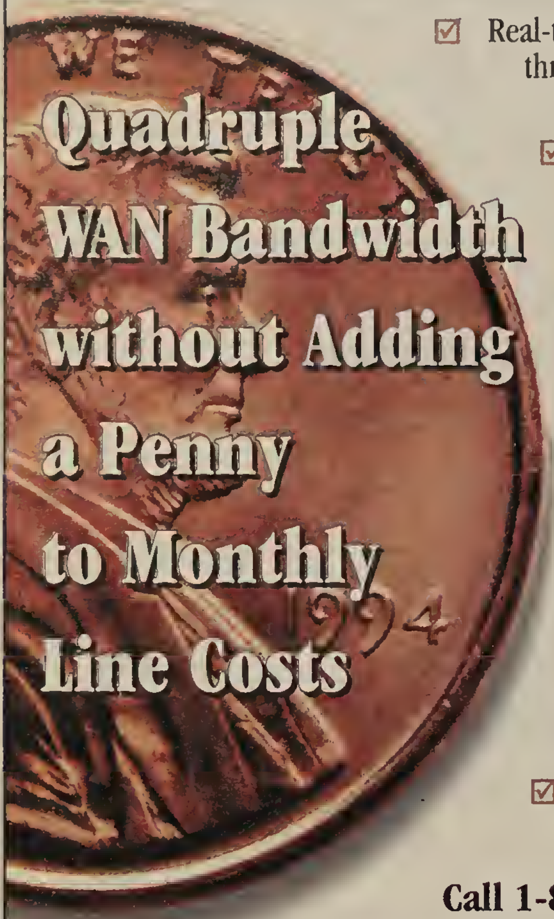

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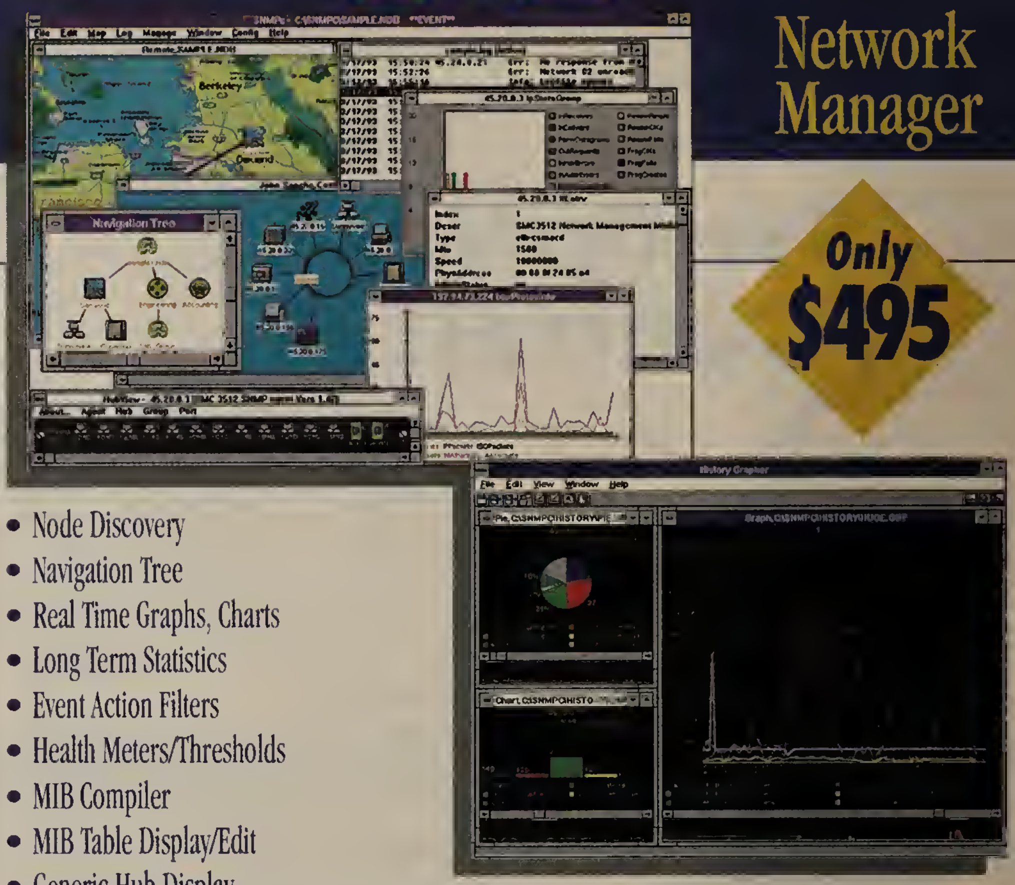

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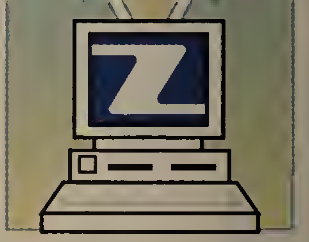

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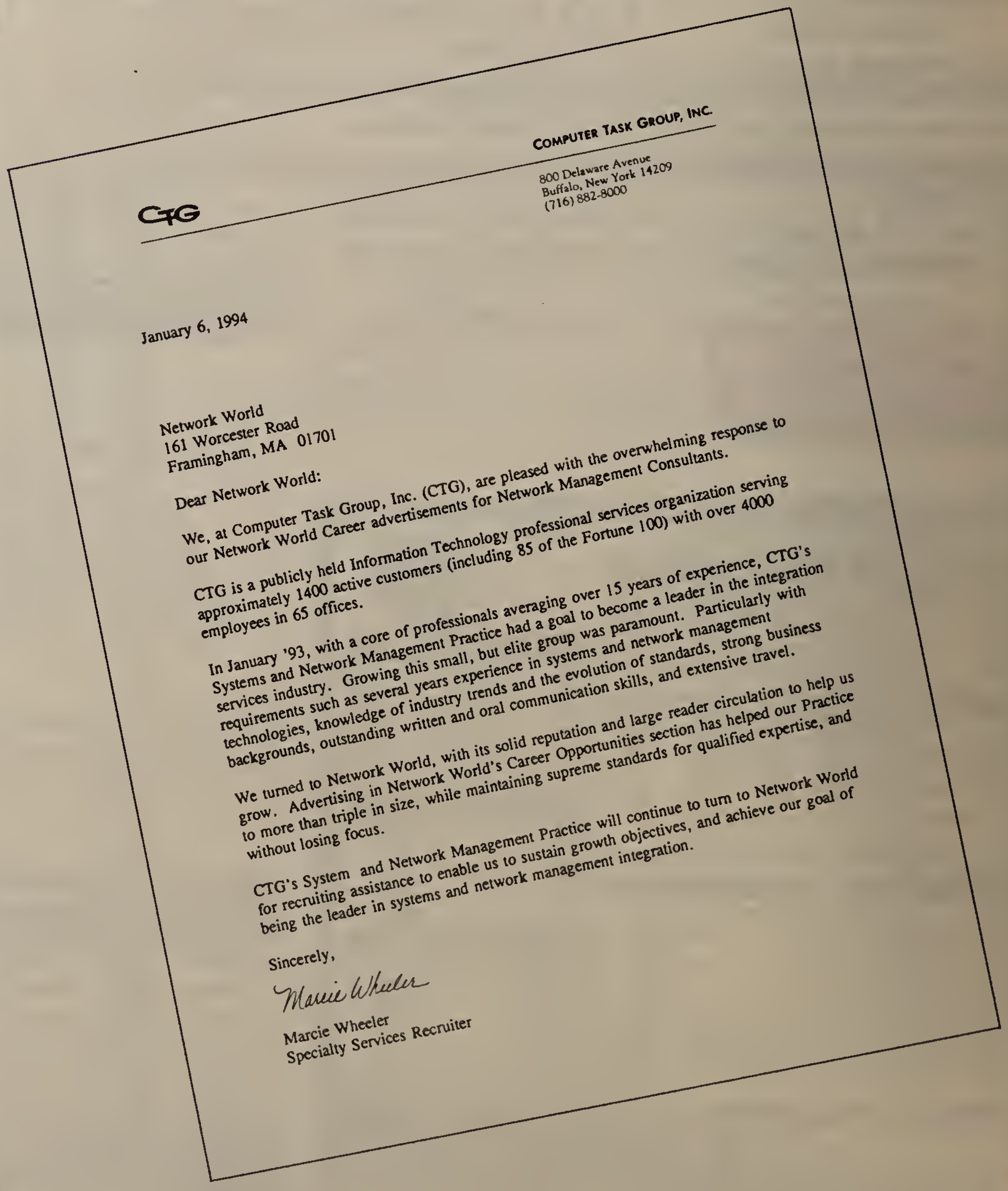

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Esprit

Continued from page 1

Another server may eventually land on the NetWare local-area network at the company's New York showroom, which is tied to headquarters via a frame relay link.

The retail outlets, which use small file servers to link point-of-sale systems in the store, update their data nightly by communicating with headquarters via a 9.6M bit/sec modem.

Ins and outs of outsourcing

- **Set a range for the longest and shortest time of contract.**
- **Know the maximum and minimum potential costs of the deal; compare to the cost of doing everything yourself.**
- **Pick a flexible vendor.**
- **Know the vendor's outsourcing experience and abilities, as well as how much of the work will be left to your staff.**
- **Document your data procedures so the vendor can run your operation effectively.**

Outsourcing vendor Software Maintenance Specialists (SMS) of Santa Ana, Calif., will take over Esprit's mainframe data processing while Esprit builds the client/server network. This will give Bates a chance to orient his staff to the new technology.

Getting mainframe developers to switch to the new technology "has been a gigantic problem," Bates admitted. It requires a whole new set of skills — and training from the ground up — that experienced staffers often find difficult or distasteful. Six of Esprit's 38-person information systems staff quit rather than make the transition.

CAREER PROSPECTS

The rest of the staff sees the new technology as a career opportunity, however, and Esprit is backing them.

"We're willing to spend a lot of time and money on training," Bates said. "We're doing everything we can to focus our people in the new direction."

Fashionable financials

Esprit's annual U.S. revenue is almost $1 billion, accrued from 243 retail and franchise stores in 40 countries.

The firm hired IBM to help manage the first year of the transition and give the mainframe crew and managers basic client/server training. It also set up the Unix net, tied it to Esprit's existing LANs, and designed application development methods and models.

Bates and his staff are designing their own advanced client/server curriculum that covers advanced Unix development skills, programming in C, using computer-aided software engineering development tools, and database management for Sybase, Inc. and Informix Software, Inc. products.

Given all this work, why not just pass off the mainframe staff to SMS as part of the outsourcing deal, then hire client/server specialists to replace them?

"The coldhearted answer to that is people are damned hard to find with that experience," Bates said. The less coldhearted answer is that "we place their experience with Esprit in the same importance range as their technology understanding."

Experienced Esprit developers know how the firm works and have collaborated with members of other departments to tune applications to solve particular problems. "And their ability to understand [Esprit's] business problems and to empathize with them is very important," Bates said.

Esprit hopes to reap the benefits of all this development and training not only in direct operational cost savings, but also by cutting its product development time and making its order-fulfillment system better.

Fashion companies sell clothes by season, which used to mean four product cycles per year. Now there can be as many as eight, but Esprit's host-based applications are not flexible enough to handle that many. When Esprit wanted to squeeze a fifth season between summer and fall, four developers took eight months to complete what Bates calls "major surgery" on the company's order processing application.

The application designates products first by season, then by style. A department store that ordered one garment in the spring and the same item in the summer had to use two product numbers, making it hard to identify which product the store wanted and if Esprit had it in stock.

Although he originally planned to develop all the firm's client/server applications in-house, Bates said the selection of reasonably flexible and powerful third-party applications convinced him otherwise. Esprit will buy most of its applications, then customize and maintain them in-house. When there are not suitable off-the-shelf products available, Esprit's new team of client/server developers will write them.

The deal with SMS will allot the firm time to develop its new system and get some experience managing it and developing applications for it, Bates said. The deal is structured so the first two years of outsourcing are more expensive than the third, encouraging Esprit to keep SMS on the payroll.

"We found that the only downside in the entire transaction would be if we were able to miraculously bring off this entire transition in less than two years," Bates said.

"If we do that, it'll cost us some money with SMS. But if we can complete the transition that quickly, there will be a whole lot more attendant benefits to the company." ◻

ATM LAN

Continued from page 1

a global ATM environment, according to ENR members and analysts.

While basic connectivity should work if carriers and equipment makers have certified their offerings as interoperable, for the next year or two, vendors will be implementing various aspects of Asynchronous Transfer Mode in unique ways, leaving network planners to resolve the differences.

For example, some vendors do not support the Network-to-Network Interface (NNI). That partially completed specification, when final, will allow different vendors' ATM nets to consistently pass along management information, said Fred McClimans, principal at Decisis, Inc., a Herndon, Va., consultancy. And some vendors support only portions of the spec in its current form, he said.

Someone has to make sure cross-net schemes are consistent at varying levels of service since most companies require measurable, predictable latency and performance levels for specific applications.

Because of this, compliance on congestion control and traffic prioritization were among the top concerns expressed by Jeff Marshall, senior managing director of communications at Bear, Stearns & Company, Inc. in New York, during an ATM interoperability panel at last week's NetWorld+Interop show. Bear, Stearns is in the throes of setting up an international ATM net.

"You can't compound latency with different schemes as traffic traverses multiple networks," Marshall said.

STEPS TO INTEROPERABILITY

But as Thomas Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J., points out, "Even though equipment and services have been deployed, there is no consistency among equipment vendors and carriers on how class of service is defined, measured or assured."

Users can begin to smooth out the interoperability problems by quizzing application providers about latency requirements, McClimans said. "Those requirements are worth putting in your carrier contract," he said.

According to Nolle, users should then ask their equipment vendors what information they need from the carrier to set parameters. They should ask, for example, what the quality-of-service parameters associated with permanent virtual circuits are.

The next step is to ask the equipment maker how its switch interoperates with the carrier switch to ensure quality of service.

GROWING PAINS

While all new technology goes through interoperability growing pains, the fact that ATM has many options and service layers within it renders multivendor networking even more complicated, analysts said.

For example, if a user chooses a certain class of service — such as ATM Class D, which is connectionless — the carrier and customer premises equipment vendor obviously both have to support that class of service, Nolle explained.

Gould recommended that users specify clearly in their requests for proposal their requirements for connectivity and performance and get vendors to handle subtle functions the same way. These would include, he said, virtual path and virtual channel mapping — the way call setup information is handled.

"Usually, it takes two years [after standards are established] for different vendors' products to be interoperable," said Randy Cosby, network manager at Texas Children's Hospital in Houston and an ENR member. "In the meantime, we're going to run a test bed using our legacy products and new switches to make sure everything works together."

Even ATM pioneer Bear, Stearns is three months away from defining proper billing interoperability issues among network service providers, Marshall said. "The interoperability is pretty easy inside the building," he said. "But it gets difficult in the outside world."

Early ATM adopters need to understand the switching equipment in the carriers' nets, some observers said.

For example, the way carriers provide for "bursting" — a scheme that allows users to grab "free" network bandwidth during a transmission if spare capacity is available — differs, said Jayne Fitzgerald, AT&T's director of high-speed services.

She explained that there is the potential for the local carriers at either end of a connection and the carrier in the middle to all handle bursting in different ways.

This could result in bursting during part of the trip only but falling back to lower speeds within other net segments, negating the bursting advantage.

Steven Taylor, president of Distributed Networking Associates, a consultancy in Greensboro, N.C., agreed that the bursting issue is important and should prompt users to bone up on the carriers' switch characteristics.

"There are various mechanisms for determining who gets that spare capacity," he pointed out. "Users should contract for a level of probability that they will be the bandwidth recipients."

The situation gets even more complicated in the world of switched virtual circuits, where user-to-user connections are not predefined and the variables get more numerous, according to Charlie Giancarlo, director of marketing at Kalpana, Inc., a maker of LAN switches.

Bottom line, he said, "any sophisticated, early adopter of ATM carrier services should never just subscribe to a service and leave it up to the carrier to worry about interoperability." ◻

NETWORK WORLD

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Migration

Continued from page 1

finally going to pull its entire ATM strategy together."

Putting routing and bridging functions in the TNN will enable IBM to begin to integrate existing local-area network applications with emerging ATM technology. It will also pit IBM against the likes of Cisco Systems, Inc., which is pursuing a similar strategy with its CiscoFusion technology, and Newbridge Networks, Inc., which is striving for the same thing with its Vivid line of ATM switches.

"IBM is going to finally demonstrate how it will tie together the enterprise via ATM," said Frank Dzubeck, president of Communications Network Architects, Inc., a consultancy in Washington, D.C. "With these moves, IBM is going to refresh and refocus its ATM strategy."

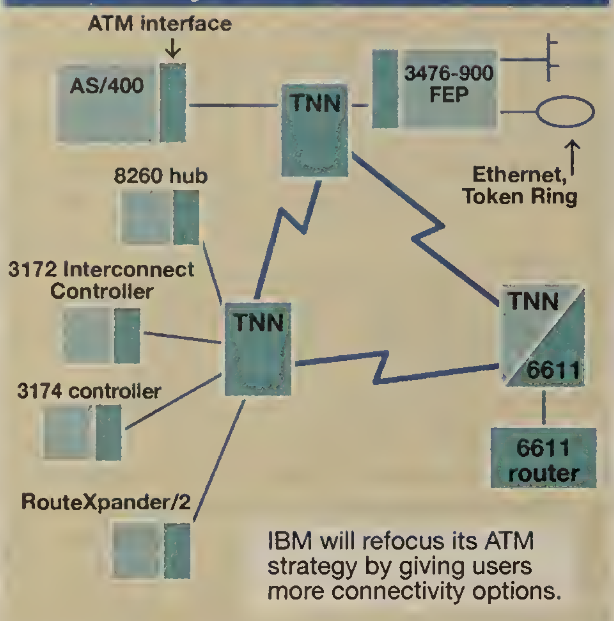
When IBM announced its wide-ranging ATM product strategy last June, it included everything from ATM chipsets to a multigigabit ATM switch. At the time, analysts hailed the announcement but criticized the lack of support for existing applications and protocols, particularly Systems Network Architecture. The only SNA box that contained an ATM statement of direction was the 3172 Interconnect Controller, IBM's LAN-to-mainframe gateway.

Since IBM's initial ATM announcement, the company has pushed SNA users to employ frame relay as the stepping-stone to future ATM services, but now users will be able to bypass that step if they want.

"Frame relay is still the way to go for most SNA users, but we will now offer a choice of migration paths," said Rick McGee, director of IBM's controller products group. "Users will ultimately be able to access ATM from anywhere they want."

IBM will add ATM interfaces or adapters to the 3745, 3174 controller, RouteXpander/2 and Application System 400 to give existing users a wider variety of access choice to ATM backbones. ATM support for the FEP will be added to a new stand-alone version of its Model 3746-900. Now, the 3746-900 must be bolted to an existing 3745.

New lay of the IBM ATM land



IBM will refocus its ATM strategy by giving users more connectivity options.

GRAPHIC BY SUSAN J. CHAMPENY

The stand-alone version would give users a lower priced FEP that can handle IBM's Token-Ring, Ethernet and Fiber Distributed Data Interface-based LANs, as well as traditional Synchronous Data Link Control links. It will also support IBM's Advanced Peer-to-Peer Networking (APPN) technology and the Dependent LU Requester feature, which lets 3270 devices participate as full peers in an APPN net.

IBM discussed this FEP configuration at ComNet '93 last February and first demonstrated the technology here. IBM executives said a formal announcement of the product is forthcoming.

"A small 374X is a good idea, but the success or failure of the Model 900 really depends on the price," said Anura Guruge, an independent analyst in New Ipswich, N.H. "Currently, as an adjunct box, the price starts at $37,000, and that's still too much."

On the router front, IBM said the long-awaited, more powerful 6611 Models 140 and 170 are on the horizon. The new models will double the port capacity and throughput of existing models, Simon said, though he did not provide any additional details. ◻

GEIS and SITA unveil EDI services, products

BY ADAM GAFFIN

Orlando, Fla.

GE Information Services (GEIS) last week introduced several electronic data interchange products at the Data Interchange Standards Association, Inc.'s EDI '94 show here, including one that allows for real-time EDI transactions.

GEIS' new EDI-Connect CICS System is used to link IBM mainframes to GEIS' EDI-Express network in real time. EDI messages have traditionally been delivered in a store-and-forward manner, but a growing number of suppliers want the ability to turn around incoming purchase orders and other EDI transactions as quickly as possible, said Lincoln Yarborough, product marketing manager for GEIS' EDI Network Services.

Pricing for the EDI-Connect CICS System starts at $2,000, with an $84 monthly fee kicking in after the first year.

The company also announced mapping software for Windows, Windows NT and Unix platforms that lets end users quickly build EDI maps – the route that an EDI transaction takes through a system – via a visual interface. The Commerce-Express EDI Application Integrator is expected to ship in September. No price has been set.

Michael McDowell, product manager for GEIS' Electronic Commerce Services, said the company is beginning to see convergence of traditionally separate technologies such as EDI, electronic mail and fax. At the show, GEIS demonstrated prototype software that allows for the integration of such services into a single front end. The company hopes to release the software later this year.

Also at the show, the SITA Group, an international airline communications consortium, announced it has started up its own value-added network (VAN) based on U.S. and international EDI standards. The SITA Group continues to offer a proprietary data exchange system to member airlines.

The SITA Group said it was responding to growing demand from both its members and their suppliers for a standards-based EDI network. The SITA Group will run a translator system so airlines' existing cargo-handling and engineering systems can talk to suppliers' systems through the U.S. X.12 or international EDI standards. It also offers X.400 messaging and is currently negotiating interconnect agreements with other VANs.

✆GEIS: (301) 340-4000; SITA Group: 44-81-572-6161.

Internet

Continued from page 1

Users attending the demonstration of the service at Novell's NetWorld+Interop 94 booth said they could foresee using the network to augment their existing wide-area networks by reaching out to more employees and business partners.

JEFF SCHEID

FRANKENBERG

They also said the idea of using a single logon to access local NetWare services as well as those over the AT&T-Novell network is attractive.

"With this, I can outsource all my [wide-area] access to AT&T," said one user, who requested anonymity. "AT&T could deal with all the numbers and access codes of all the people we have out in the field that need to access our [headquarters-based] resources."

Another user, Ameet Patel, senior project manager for emerging technologies at BASF Corp. in Parsippany, N.J., said the availability of Notes-based and other applications over a public network sounds promising.

"There are other services out there today, but none of them offer things like Notes," he said. "The applications will be key."

But users expressed caution about using the network for intercompany communications.

"I don't envision us using this for outside-company access for security reasons," the user who asked not to be named said. "It doesn't make a difference to me if it uses NetWare 4 security; we just don't want anyone that's not an employee on our net."

The AT&T NetWare Connect Services network will be set up similarly to the way the Internet is set up and operated, according to AT&T and Novell officials.

The network will be based on Novell's NetWare Directory Services (NDS), a core component of NetWare 4 that provides global access to resources on a net regardless of where they are located. Through the NDS directory tree, AT&T will be able to manage and direct all calls into the AT&T NetWare Connect Services network. The network will also rely on NDS' security services, which are based on public key user authentication and digital signature per-packet technologies.

The network will run both TCP/IP and Novell's Internetwork Packet Exchange (IPX) protocols and will route calls using Novell's NetWare Link Services Protocol (NLSP).

Users will be able to access the network several different ways. Corporate users will be able to access the net either via a dedicated link — such as an InterSpan Frame Relay Service T-1 pipe into the AT&T NetWare Connect Services "cloud" — or through a dial-up access server such as Novell's NetWare Connect server. In latter case, the user would employ AT&T's InterSpan Access Service, which is available at speeds up to 14.4K bit/sec.

Mobile or remote users will also be able to dial into the AT&T NetWare Connect Services cloud via a modem through AT&T's InterSpan Access Service.

Initially, once connected, users will be able to access applications from Novell or AT&T, such as AT&T Network Notes, AT&T EasyLink and Novell's Global Message Handling Service. Novell has also talked about using the network to provide a customer service offering.

> **This is only the beginning of electronic commerce and electronic collaboration."**
>
> **John Petrillo**
> President, Business Communications Services unit
> AT&T

Down the road, users will be able to access applications developed by third-party vendors and will be able to create their own applications and become, in effect, service providers themselves.

On the demo network in Novell's booth here, customers saw how they could log on to the AT&T NetWare Connect network and navigate through it via a graphical interface to find a list of high-tech vendors. Users could then click on a vendor name, be automatically connected to that vendor's server, then drag-and-drop onto their own server an on-line copy of the latest version of that vendor's product.

Due to the basic components of this net already being in place, the first customer beta sites will begin testing late this year. General availability of the service, to be offered and managed by AT&T, is expected in the first quarter of next year.

Pricing has not yet been set, but AT&T officials said the service will be priced similar to the way Internet services are priced today and will be competitive with Internet prices.

According to AT&T and Novell officials, the new service is the first step toward making the Information Superhighway a reality.

"This will be a next-generation net," said John Petrillo, president of AT&T's Business Communications Services unit. "This is only the beginning of electronic commerce and electronic collaboration."

Robert Frankenberg, Novell's new president and chief executive officer, said, "With AT&T NetWare Connect Services, we are taking a giant step toward making computing pervasive." ◻

Senior Editor Joanie Wexler contributed to this story

Simple steps can help users prevent Lotus Notes headaches

BY ADAM GAFFIN

The ease with which a network operator accidently disabled an international Notes network in April emphasizes the need to have server security and a usage policy for distributed environments, industry observers said last week.

Follow UP

Arthur Andersen & Co., a Chicago-based consulting and accounting firm that relies heavily on the Lotus Development Corp. Notes groupware product, suddenly lost the use of its Notes net last month because of a network operator's error (*NW,* May 2, page 1). The employee was developing a new application and inadvertently wiped out much of a user directory on the server on which he was working.

"It says maybe you should know something before you play around [with a server]," said Sheldon Laube, who oversees a 22,000-node Notes network at Price Waterhouse, a New York-based accounting firm.

Notes' replication feature, normally one of its advantages, ensured that Arthur Andersen's shrunken user directory was quickly distributed to hundreds of servers on the company's 30,000-user Notes network.

The next day, many Arthur Andersen employees were unable to use the network — a problem minimized by the fact that the replication occurred Friday night and Saturday morning. Arthur Andersen was also helped by a policy to back up the servers routinely.

The simplest solution "is not to work at the server," said David Marshak, an analyst at the Patricia Seybold Group, Inc. consulting firm in Boston. Notes networks consist of both servers and clients, he said.

Arthur Andersen was smart to have a backup policy in place, because that meant it could quickly restore the lost directories, he said. At some companies, "nobody worries about backing [the user directories] up," because employees figure any problems will be erased the next time the directories are replicated, he said.

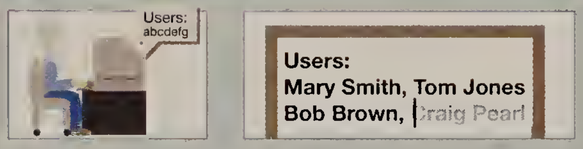
Distributed Systems Solutions, Inc. (DSSI) of Westlake Village, Calif., sells tools that let net administrators monitor Notes databases and determine who can make changes to them. Lotus is working on advanced tools of its own, due out early next year.

But Stewart Bloom, vice president for marketing at DSSI, said administrators should take steps now, such as physically isolating servers, to prevent tampering.

John Bartlett, Notes product manager for Lotus, agreed that physical security of the servers is very important. Bartlett said that Notes has a very strong security model for limiting access to databases and directories, but that this does not work well when people have physical access to the server.

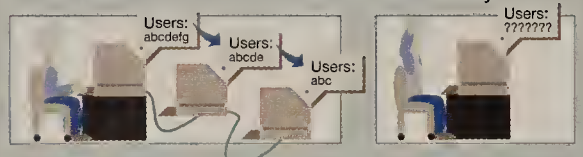
Carole Anne Ogdin, president of Deepwoods Technology, a Santa Clara, Calif., Notes consultant, said she would never recommend using a server for anything other than running a Notes network. ◻

How to disable a Notes network



1. Create a "view" of a user directory on a Notes server.

2. Delete the view: this then deletes any names in the view from the user directory.



3. Later, at normally scheduled times, the server replicates the newly shrunken directory to other servers on the network.

4. Users are now unable to use the network until the directories are restored.

GRAPHIC BY TERRI MITCHELL

Agencies to unite on network deals

BY ELLEN MESSMER

Washington, D.C.

The Department of Defense and the General Services Administration (GSA) last week told a Senate committee that they intend to purchase network services together in the post-Federal Telecommunications System (FTS) 2000 era, but don't favor a large single contract like FTS 2000.

Testifying before Congress, the Defense Department's Gen. Emmett Paige Jr. and Gen. Alonzo Short, joined by GSA FTS 2000 administrator Bob Woods, said they will soon complete a joint list of planned network purchases for the years following the expiration of FTS 2000 in 1998.

The marriage of convenience between the Defense Department and the GSA, which administers the FTS 2000 contract, received the blessing of the General Accounting Office (GAO) last week. Criticism from the GAO, the federal government watchdog organization, would have made it politically difficult, if not impossible, for both partners to proceed.

But the ever-changing network industry has government managers thinking that shorter contracts for specific services are the way to go to let users more quickly obtain the services they want. On the way out are broad, multiyear agreements such as FTS 2000 and the Defense Commercial Telecommunications Network (DCTN), which expires in 1996.

"We need to do more contracts and shorter contracts," Woods testified before Sen. John Glenn's (D-Ohio) governmental affair committee. "The shorter the contract, the more you can follow the market."

Congressional approval will be needed for any course that government takes. "In a rapidly changing environment, we have to ask whether it's advisable to force everyone to buy everything off one contract," Glenn said. "But we don't want every contractor traipsing into every office in Washington, either."

At the Senate hearing, Paige said flexibility in obtaining services is a paramount concern.

"Taking timely advantage of new technological capabilities to offer to the warrior on the battlefield is critical," he said.

Wireless services such as Asynchronous Transfer Mode, frame relay and Switched Multimegabit Data Service are all services the military is eager to include in future procurements.

For a long time, the military balked at using FTS 2000, which offers a wide variety of services on two separate nets provided by AT&T and Sprint Corp. Today, only about $90 million out of the nearly $20 billion the Defense Department spends annually on telecommunications is spent on FTS 2000 services. Most of its net dollars go toward hundreds of private nets for which the Defense Department owns its own switching equipment, or the private DCTN provided by AT&T. But Paige last week said the department is ready to stop managing its own nets, many of them more than 30 years old, and buy public network services. ◻

IBM wants piece of mgmt. database consortium action

BY JIM DUFFY

Las Vegas

IBM last week tossed its management database technology into the Management Integration Consortium ring, setting up a head-to-head confrontation with Hewlett-Packard Co. for industry standard status.

IBM surprised many of those attending the inaugural meeting of the consortium when, at its conclusion, Gail Ferreira, net management product manager for Digital Equipment Corp., announced that IBM and Digital are interested in contributing technology to the consortium. Ferreira said she was speaking for IBM as a licensee of the vendor's NetView/6000 platform.

Specifically, Ferreira said IBM and Digital wanted to submit the database schema and general topology application program interface (API) of IBM's NetView/6000 and Digital's Polycenter NetView. The schema defines how management data is stored and how it can be accessed by applications. The general topology API lets applications access topology data for representing managed objects on a console screen.

Ferreira also said IBM and Digital are interested in joining the consortium's steering committee, which includes the other leading management platform vendors.

The Management Integration Consortium was formed by management software vendors to develop code that will let applications on any platform share data. That is accomplished by defining a common way to store and access management data, and coding this definition into management applications. The group is also looking at defining consistent methods for handling events and performing asset management. Its activities will be coordinated by a steering committee, of which there are currently 15 companies, and executed by working groups.

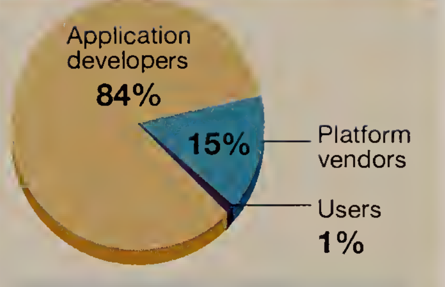
But the consortium appears to be embracing HP's idea of a database schema for nets and systems management. Indeed, many of the consortium's steering committee and general members are working with HP on its schema, said Trisha Johnson, an HP product manager.

Until now, IBM has shunned the consortium's advances for steering group participation, said Eric Olinger, product author at Peregrine Systems, Inc. and chairman of the consortium. But it appears the interest in HP's technology is too great for IBM to ignore.

"We already have a database schema that's shipping," Ferreira said. "On the floor [at Networld+Interop 94], we're showing support for multiple databases." The product HP is proposing only works with one database, Ingres, Ferreira said.

HP would not say when its schema will be ready. But Jim Corrigan, president of Ki Networks, Inc., an HP OpenView and NetView/6000 application vendor, said it would be in late May.

Management Integration Consortium membership



Total members: 172

HP is shrugging off any talk of a schema bake-off with IBM. "We don't think any single vendor's schema concept is going to fly," said Larry Robinson, OpenView product-line marketing manager for HP. "They tried this before with RODM."

RODM, or Resource Object Data Model, an object database schema developed by IBM for NetView, is not widely adopted.

But the real issue is not which vendor's schema is adopted by the consortium; it's that the issue of data integration is being addressed, analysts said.

"There's a screaming need for this," said Jeremy Frank, vice president and product director for networking at Gartner Group, Inc. in Stamford, Conn. And the consortium is "raising the level of consciousness" in the industry for this need. ◻

MCI

Continued from page 3

ATM launch, MCI last week spelled out changes it is making in the recently acquired BT North America service portfolio.

For users of BT North America's Tymnet X.25 net, the biggest change will be an increase in the maximum service access speed to 28.8K bit/sec. With data compression, some applications will see access speeds as high as 115.2K bit/sec, a considerable increase over the previous top speed of 9.6K bit/sec.

As for other BT North America services, MCI's plans for frame relay may be the most interesting.

The carrier plans to more closely align BT North America's and its own frame relay service sets, and would like to link the service platforms through net-to-net interfaces. MCI uses Wellfleet Communications, Inc. gear, and BT North America uses StrataCom, Inc. switches. The differences between the two platforms, however, may mean that the nets will not be connected for sometime. For example, MCI's platform can track discard-eligible frames for usage-based billing, but the StrataCom switches currently cannot support tracking discard-eligible frames. ◻

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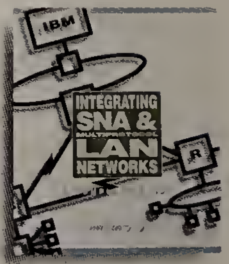

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